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ART. I.—CASES OF EMPHYSEMA OF THE LUNGS AT THE LOUISVILLE MARINE HOSPITAL, WITH REMARKS.

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THREE CASES of Emphysema of the lungs have lately been presented before the medical class at the Amphitheatre connected with the Louisville Marine Hospital. This affection, interesting in itself, has pathological relations of great interest and importance. It is an affection by no means very common, yet, on the other hand, not extremely rare. There is reason to believe that it is often overlooked, or insufficiently appreciated by practitioners of medicine. In view of these considerations, I propose, in this article, to give a report of these three cases, respectively, embracing an account of the symptoms and physical signs at the dates of admission and of discharge, and appending a few general remarks which the facts contained in the histories of the cases will suggest.

In each of the three cases the disease was of that form called *vesicular* or *true Emphysema*, the morbid condition, in this variety of the disease, consisting in a permanent enlargement, in a greater or less degree, of the *air vesicles* of the lungs, either by distension, or rupture of the cell walls and coalescence, or both being com-

bined; differing from what is distinguished by the name of *interlobular Emphysema*, in that the latter consists of the extravasation of air into the areolar structure interposed between the pulmonary *lobules*. Interlobular Emphysema is undoubtedly a veritable affection, but so rare that, practically, it possesses not much importance. It is safe to say that ninety-nine of one hundred cases of emphysema presenting themselves in practice, are of the kind called *true* or *vesicular*.

An important distinction pertains to the point of departure, or the primary changes of structure in different cases of vesicular emphysema, which will account for some variations in the physical signs, and may explain certain discrepancies appearing in the writings of different observers. In some instances the affection commences with, and becomes developed in consequence of atrophy and dissolution, more or less of the intervesicular septa. As the result of this atrophy and dissolution, coalescence of the cells, to a greater or less extent, takes place. The area of the respiratory surface, of course, is diminished in proportion to the extent of coalescence; just as the interior surface of a single hollow globe is less than the aggregate of the inner surfaces of a series of smaller globes. Here the point of departure, or the primary change, is the destruction of the partition walls of the air cells. In this species of emphysema the volume of the lungs may be but little increased. This is an important point of difference with reference to the external appearance of the chest, and some of the physical phenomena. As emphysema thus developed is especially incident to advanced life, it is sometimes known as *senile emphysema*.

In other instances the disease commences with an abnormal and permanent enlargement of the cavities of the cells. They become over-distended, and, losing more or less of their elasticity, they continue in this condition. It is thus a kind of wind dropsy. There is an excess of air in the cells, but it is retained there, and inasmuch as the chemical changes to be wrought in the blood require constantly fresh supplies of air, as of blood, the effect is precisely the same as if the cells were diminished in size to a degree rendering their capacity insufficient for the function of hematosis. Over-distension is the point of departure in the primary change, in this second kind of emphysema, and in this variety of the affec-

tion the volume of the lungs, or of the portions affected, is notably increased, and, hence, greater enlargement of the chest, and other phenomena dependent on the larger quantity of air which the lungs contain, and the greater pressure exerted on the thoracic walls. In this latter kind of emphysema, however, it is to be remarked, atrophy of the intervesicular septa may occur, but in this instance, it is a secondary, not a primary lesion. It will be seen that the cases which are to follow illustrate the form of Emphysema last mentioned.

Both kinds of Emphysema, so far as regards the relation of the disease to its important symptoms, and effects, are identical; in other words, after the affection becomes developed, the pathology is the same. The train of evils, in either instance, arises, first, from defective performance of the blood changes dependent on respiration, and second, from the obstacle which is presented to the free transmission of blood through the pulmonary capillaries. The diminished area of the respiratory surface of the lining membrane of the cells, in consequence of destruction of the walls and coalescence, and the inability to replace sufficiently, by successive acts of respiration, the air contained in the cells, account for the defective blood changes. The obstacle to the free circulation through the pulmonary capillaries arises from several causes. *First*, the capillaries are diminished in proportion to the destruction of the cell walls; *Second*, the over-distension compresses the vessels and thus becomes a source of resistance to the passage of blood; and, *Third*, inasmuch as the chemical actions going on between the blood and atmosphere develop an attractive force which helps to carry on the pulmonary circulation, a morbid diminution in these changes impairs proportionately this attractive force, and leads to a retarded flow of blood. In consequence of the obstacle to the pulmonary circulation, thus, in different ways incident to emphysema, the right ventricle suffers an over-accumulation of blood. As consequences of this result we observe some symptoms in cases of the disease referable to a congested state of the systemic venous system; and, as a remote effect, we find enlargement of the heart, sooner or later, occurring, the evils of which are added to those more directly due to the condition of the lungs.

With these few preliminary remarks, I proceed to give, from the hospital records, an account of the cases, commencing with the case in which the emphysematous lesions were least in degree, and ending with the one in which the characters of the affection are the most strongly marked.

CASE 1.—*Michael Fanning*, aged thirty-seven, Irish, machinist, admitted December 22d, 1853.

Previous History.—States that he is not aware of any of his family having been affected similarly to himself. At about the age of sixteen years, he began to have paroxysms of difficulty of breathing, occurring generally at night, requiring him to take the sitting posture. From that time to the present has generally been conscious of a sense of labor in respiration. For the past twenty years has not been able to take active exercise without a sense of breathlessness. Whenever he has contracted cold, the embarrassment of respiration has been considerable, obliging him to quit work for a time. His respiration has always been better in the summer than in the winter. The habitual sense of labor in respiration he thinks was greater for the first five years, than since. He is not aware that his malady has increased for the last fifteen years in that respect, but he has found that he cannot bear active exercise as well as formerly, experiencing therewith greater want of breath. He has been more subject to colds of late years than formerly, and they are attended with greater disturbance of respiration. Has been subject for the past twenty, or more, years to paroxysms of difficult breathing, occurring without cold, exercise, or any obvious cause. These paroxysms are very irregular in their recurrence, being most apt to come on during the night, but sometimes in the day time. They have occurred, more or less, weekly, and sometimes several times in the twenty-four hours. They last from five minutes to an hour. They have increased in frequency and severity every year. He prefers to lie with his head elevated. He cannot lie on a feather bed; he says it "stops his breath" to do so, and that he is obliged to get up and lie on the floor. He has had more or less cough and expectoration for the last twenty years. These symptoms have increased, but not greatly. Has never had hemoptysis, hut has frequently expecto-

rated mucus streaked with blood. He thinks he has preserved the same weight for several years past. During the last summer, while affected with intermittent fever and diarrhœa, he lost flesh, but has gained, in that respect, of late. Has worked, more or less, during this whole period. He has been accustomed to drink daily for the last sixteen years, and has occasionally drank to excess.

Present Condition.—Laboring under an attack of bronchitis. Face presents a puffy appearance, and is deeply congested. Suffers much from paroxysms of coughing attended by dyspnœa, especially during night. Expectorates freely muco-purulent matter. Appetite poor. Has slight diarrhœa, with some tenderness over abdomen, and tympanites. He is not confined to the bed, and is not emaciated. Pulse 114, very feeble and quite irregular. Respirations 24. They are labored, and the labor is especially marked in the expiration. He is not at the time of this examination laboring under a paroxysm of difficult respiration.

Physical Signs.—The chest is full and rounded, the right side more so than the left; the clavicles are but slightly apparent. The expansive movement is slight. Respiration is diaphragmatic, the abdominal muscles acting with expiration. The upper part of the chest inclines forward.

Percussion.—Both sides, in front, yield a very clear percussion sound. The left side gives a fuller and somewhat graver note than the right. The sense of resistance is distinctly greater on the right side. Hepatic flatness commences with the sixth rib, and on line of nipple. Clear percussion sound on both sides behind.

Auscultation.—There is so little movement of the upper part of the chest with respiration, that it is somewhat difficult with the ear applied to the chest, to tell with which of the respiratory acts the sounds correspond. They appear to be sometimes with one, and sometimes with the other.

On examination at the time of noting the signs, there is a feeble, shortened sound of inspiration on the right side, at the summit of the chest, and an obscure râle accompanying expiration. On the left side the inspiratory sound is better evolved, and longer, with no distinct sound of expiration, but an obscure râle taking its place.

Over the middle and lower thirds, on both sides, a faint inspiratory murmur is alone heard. Behind very faint inspiration over scapula, and scarcely appreciable below.

Vocal resonance slight, and about equal on both sides, at the summit, in front.

Vocal fremitus slight and about equal on the two sides.

Apex impulse of heart not appreciable by touch, but faintly visible at the nipple. Relative dullness transversely, in precordia, extends to about an inch beyond nipple. Heart sounds very feeble but pure.

Treatment.—Anodyne, expectorant mixture, and the application of croton oil to chest. Nutritious, non-animal diet.

January 15th, 1854. The patient has progressively improved to this date, and now feels sufficiently well to be discharged. The diarrhœa has ceased. Appetite is good. Cough much less troublesome, and expectoration small. The respiration is less labored than when he entered the hospital, but active exertion occasions panting as heretofore. Pulse 88, and frequently intermitting. Respirations 28. Aspect pallid, but no lividity. Expression does not denote anxiety. No morbid change in countenance except pallor.

Physical Signs.—Form of chest not notably altered. The infra clavicular and post clavicular spaces are not depressed. The clavicles do not project, their outline simply being apparent. The spaces, however, above and below the clavicle are not bulging. The right infra clavicular region is fuller than the left. Intercostal depressions are no where visible, except at the lower and lateral portions of the chest. On a posterior view no intercostal depressions are apparent. The patient presents moderate *embonpoint.* The movements of the chest in respiration are very slight. The expansive movement at the summit, on the right side, is almost null. On the left side, slight. An evident disparity exists between the two sides in this particular. The entire chest presents, with inspiration, a moderate elevation movement, except at the lower portion, and here it appears slightly to contract. Behind, the upper part of the chest inclines forward. The spine is curved, first backward and then forward. The right scapula moves with the respirations more than the left. On forced respi-

ration, the whole chest is elevated as if in one piece the elevation movement becoming conspicuous, while the expansive movement is not increased. Walking briskly twice across the road occasions panting respiration with the characters just described. The heart's action is also thereby increased.

An impulse of the heart cannot be felt while he is tranquil, but after walking across the ward it is indistinctly felt by the side of the ensiform cartilage, and not elsewhere.

The expiratory acts are evidently longer than the inspiratory.

The percussion sound is very resonant at the summit of the chest on both sides. On the right side it is more tympantic. The pitch on the right side is slightly higher. The resistance of the thoracic wall on the right side is in a marked degree greater than on the left. Posteriorly, over the scapula, the percussion sound is abnormally clear.

In the precordial region the sound is quite dull transversely as far as the nipple.

No respiratory sound is appreciable anywhere save an indistinct murmur with the inspiration in the right interscapular space.

Neither vocal resonance, nor fremitus are distinctly appreciable.

On mensuration the right side is seventeen and three quarter inches; and the left, seventeen inches.

The sounds of heart full and pure.

Patient discharged.

CASE 2.—*Mary Jane Kesterson*, aged nineteen, widow, admitted November 27th, 1853.

Previous History.—States that she enjoyed tolerably good health prior to about two years ago, when she had measles. Since that time she has suffered constantly, more or less, from cough, and difficult respiration. During the past two years has never been free from a sense of labor in respiration, but experiences much greater difficulty at some times than at others. She has been subject to paroxysms of dyspnœa coming on irregularly, and also irregular as respects duration. These paroxysms are most apt to occur at night, and frequently she has several in succession during the same night. She also suffers similar attacks during the day time. Exercise occasions difficulty of breathing. Laugh-

ing has the same effect, with acts of coughing, when violent, she feels as if she should *lose* her breath.

Present Symptoms.—She has a pretty large expectoration, decidedly purulent, but the quantity, she says, is less than heretofore. Face presents a puffy appearance, with some lividity of prolabia. Sleeps best when she lies with her face downward. The acts of coughing are violent and spasmodic, resembling the coughing in pertussis, exclusive of the sonorous inspiration, or whoop, of that affection. During a paroxysm of coughing, the face becomes deeply congested, and the respiration greatly embarrassed. Expectorates with considerable effort, although the matter of expectoration is not adhesive. She has slight dyspnœa constantly. Her skin is cool and dry. There is moderate capillary congestion of the upper extremities. She suffers from cold hands and feet. The radial pulse is thread-like and so as to be enumerated with difficulty. It is 100 per minute. Respirations 30, and moderately labored when the paroxysmal difficulty is not present.

The patient has had one child, not living. Has no knowledge of her parents or any of her progenitors having been affected like herself.

Physical Signs.—Nov. 30.—The anterior superior portion of the chest, on both sides, is full and rounded, the left side is fuller than the right. There is considerable elevation movement with inspiration, but the expansive movement is slight. The whole superior part of the chest, including the clavicle, is elevated with inspiration. The right side expands more than the left, and is evidently more depressed with expiration. The lower portion of the chest appears contracted, and seems to be drawn in with the acts of inspiration.* The expiratory act is in a marked degree longer in duration than the inspiratory. It is at least twice as long. This is, in part, due to abnormal shortness of the inspiration. On comparing the appearance of the chest to day, with that of yesterday, at a time when the patient was laboring under a paroxysm of dyspnœa, there is evidently a less degree of enlarge-

* Although this contraction with inspiration is sometimes real as shown by one of these cases, in this, as in other instances, it is only apparent, and is occasioned by contraction of the intercostal spaces without contraction of the ribs.

ment. This is shown by the fact that then the mammary gland did not project, while now it is somewhat pendulous.

No heart impulse is discoverable, either in epigastrium or precordia.

The circumference over the chest, at the third rib, in expiration is 29 inches; in inspiration, 29¼ inches. Below the mamma the circumference is 27¼ inches. The latter remains unaffected either by inspiration or expiration.

No intercostal depressions are visible in front. They are slightly apparent at the inferior and lateral portion of the chest.

The percussion sound is very clear, in front on both sides. Relatively it is less clear, and the pitch is raised in the right infra clavicular region. The sense of resistance is greater on the right side. Over the upper part of the middle third, percussion sound equal on both sides. There exists relative dullness over the right scapula, and over the whole of the right side posteriorly.

On the left side, in front, with inspiration, there is a fine mucous râle, and with expiration a combination of sibilant and sonorous râles, the expiratory sounds much prolonged. On the right side still louder sibilant râle with prolonged expiration. Behind, a short rough sound of inspiration, and prolonged expiration with sonorous râle.

Slight vocal resonance over the right scapula, and none over the left.

Sounds of heart heard distinctly in precordia, and pure.

Treatment.—Nutritious, but non-animal diet, Stokes' liniment to chest, anodyne expectorant mixture.

Dec. 15. The condition of the patient remaining about the same. Balsam of copaiba, in mixture, was prescribed, and no other remedies.

January 8, 1854. The patient reports better than at the date of the last record. The cough is less, and the expectoration much diminished. She has less habitual difficulty of respiration. Does not now experience much inconvenience except on exercise. The aspect is improved. The prolabia are dull in color, but not distinctly livid. The respirations are obviously performed with less labor. They are twenty per minute. The expirations are longer than the inspirations. No radial pulse is appreciable. Counted

at the carotid artery. The pulse is one hundred per minute. She sits up all day. The appetite is good, and the bowels are regular. She feels quite weak. Respiration becomes laborious and attended with dyspnœa on exercise. She suffers from palpitation on exercise. This is not a new symptom although not previously recorded. When tranquil, the impulse of the heart is not perceptible, but after walking once slowly across the room it is felt over the whole precordia, the action accelerated, and the respirations are panting.

The expansive movement at the apex of the chest, as near as can be determined by the graduated tape, is from $\frac{1}{8}$ to $\frac{1}{4}$ of an inch. At the lower part there is neither contraction nor expansion.

On both sides loud sibilant râle with the expirations, and no murmur of inspiration.

Percussion sound notably clear, with tympantic quality.

No intercostal depressions visible at the upper part of chest.

The balsam of copaiba is continued.

The patient remains at the hospital at the time of writing this report (Jan. 23, 1854.)

CASE 3.—*John Scieller*, aged thirty-three, German, baker, admitted Dec. 31, 1853.

Previous History.—Patient states that his father was affected as he is, and died at the age of fifty-six years, as he thinks, from the same affection. He has brothers and sisters, none of whom have been similarly affected.

He recollects that when not more than six years of age he could not take active exercise without difficulty of breathing; and he has ever since experienced the same difficulty. It has uniformly been worse in the winter than in the summer. Otherwise his general health has been good.

Three weeks ago he fell overboard from a steamboat, and being unable to swim, was nearly drowned before being rescued. He was unconscious when taken out of the water. He was not confined to the bed immediately after this occurrence, but worked his passage on the boat up the river to this city. He worked a few days after arriving at Louisville, but was finally compelled by

debility, cough and difficulty of breathing, to come to the hospital. A very satisfactory account of the previous history cannot be obtained, partly in consequence of the embarrassment of respiration rendering it difficult for him to talk, but still more from his imperfect knowledge of the English language.

Present condition.—Face presents a puffy and dingy appearance. Expression denotes distress. Appetite tolerable. Considerable thirst. Complains of headache. Bowels regular. Pulse 124, very small and full, pulsations occasionally lost. Extremities cold. Marked capillary congestion. Paroxysms of coughing frequently occur, with small expectoration. In these paroxysms the face becomes deeply congested and livid. He preserves a semi-recumbent posture. The respirations are 36 per minute, and greatly labored. The inspirations are short and spasmodic, and accompanied by dilatation of the *alæ nasi*. The expirations are at least four times as long as the inspirations.

Physical Signs.—The chest, in front, appears full and rounded, over and above the mammary region. The right side is more prominent than the left. No intercostal depressions visible except at the lower part of the chest, and here chiefly in the act of inspiration. The expansive movement with respirations is slight. The chief movement is that of elevation. The whole chest in inspiration is moved upward as in one piece. At the lower part the chest appears to contract with the inspirations. Above the sternum the integument collapses with the inspirations.

The percussion sound, on both sides, is notably clear, with somewhat of the tympanitic quality. This quality is more marked on the right side, and the pitch is higher.

In front, a respiratory sound is not uniformly appreciable. A faint, fine mucous râle sometimes heard on the right side at the end of the inspiratory act, and frequently a prolonged sibilant râle with the expiration. Behind, a clear percussion sound on both sides. At the upper part of the chest an indistinct murmur at the end of the inspiratory act.

A clear percussion sound in precordia, but the pitch higher than in corresponding region on the right side.

Heart sounds very feeble, and no impulse appreciable.

January 2, 1854. Since the previous date the patient has pro-

gressively improved. The respirations are now but moderately labored. They are twenty per minute. The alæ dilate slightly and the inspirations are still shortened. The countenance does not express suffering. The violent spasmodic cough has nearly disappeared. He now rarely coughs, and the quantity of expectoration is quite small. Appetite improving. Bowels regular. Pulse one hundred, and tolerably developed. The upper extremities present marked capillary congestion, and this exists in a moderate degree over the whole body.

During the severity of the symptoms, since the previous record, the patient exhibited delirium by incoherent talking.

The treatment pursued in the case has consisted solely of Hoffman's anodyne, ʒs three times daily, and whisky, ʒss three times daily.

Physical Signs.—The chest, in front, still appears expanded; more so on the right, than of the left side. There are no intercostal depressions at the upper part of the chest; and at the lower part, in front and behind, they are only visible in the act of inspiration. They are then drawn in so as to be deeply marked. The whole chest moves, upward, as in one piece, with inspiration. The expansive movement, as determined by inspection, is but slightly apparent at the upper part of the chest, while the lower part appears to contract with inspiration. The expansive movements, determined as correctly as possible by means of the graduated tape, are as follows:—At the lower part of chest, with inspiration, the chest contracts about $\frac{1}{8}$ of an inch. Through the line of the nipple the chest is nearly immoveable; there is a very slight expansion. At the upper part, the expansive movement is about $\frac{1}{8}$ of an inch.

The percussion sound is very clear—drum-like, or tympanitic—with a ringing note. These characters are more marked on the right side. It is not easy to determine a marked variation in pitch, but on the left side the note seems somewhat higher.

No sound of respiration is appreciable anywhere either in front or behind. Nor is there either vocal resonance or fremitus.

Jan. 7. Patient reported feeling well enough to leave the hospital and he was accordingly discharged.

The foregoing cases afford excellent illustrations of the symptomatology, physical signs, and the historical events pertaining to emphysema of the lungs. The disease is one of those of which little was known prior to the minute investigations in morbid anatomy to which medical science is so much indebted for its progress during the past half century. The researches of LAENNEC led to the first distinct appreciation of the character and importance of the affection; so that, in the language of ROKITANSKY, "had LAENNEC done nothing else for medical science, his discovery of this diseased condition, and of the causes giving rise to it, would have sufficed to have rendered his name immortal." The disease still offers scope for study. There are points relating to its symptoms, signs, pathology, causation, etc., not yet fully settled, with reference to which accumulated clinical observations are to be desired.

In each of the three cases the symptoms denoting the commencement of the disease were traced back to early life; in one case as early as six years of age, in another at seventeen, and in the remaining case at sixteen. In two of the cases the disease had existed for many years; in the remaining case it was comparatively recent, having existed only two years.

In but one of the cases could hereditary influence be suspected to be concerned in the production of the disease. That a predisposition to it may be transmitted, was established, some years ago, by statistical researches prosecuted by the late JAMES JACKSON, jun., of Boston, Massachusetts.

In one of the cases the disease appeared to have its origin in an attack of measles. In the two remaining cases no circumstances appear in the previous history bearing on the causation except that the patients seem to have suffered from asthmatic paroxysms, and more or less cough and expectoration from the time that the existence of a constant difficulty was evidenced in habitual want of breath for active exercise. The connection which these symptoms may have with the origin of the disease will appear presently.

The causes of emphysema, and the mechanism of its production, are not, as yet determined satisfactorily to all minds. LAENNEC attributed the disease to a catarrhal affection seated in the smaller bronchial tubes, occasioning an obstruction, not sufficient to pre-

vent the air from being forced into the cells by the act of inspiration, but offering a resistance to the egress of air from the cells with the less powerful act of expiration. This theory is now generally ignored, but a better explanation of the origin of a certain proportion of the cases of the disease has not been substituted. It seems reasonable that an incomplete obstruction, from any cause, at the smaller branches of the bronchial tree, in view of the relative power of the acts of inspiration and expiration, should lead to over-distension, and, at length, permanent enlargement of the cells. LAENNEC, however, supposed that the obstruction was due to solid sputa becoming impacted in the tubes. It is more probable that the swelling of the membrane is the source of the obstruction—that the affection is the result of subacute, or chronic capillary bronchitis, the minute bronchial tubes not being sufficiently obstructed to occasion the notable and dangerous embarrassment of respiration which characterises the acute form of that variety of bronchial inflammation. Bronchitis extending to the smaller tubes, accompanied with the formation of solid mucus, is more likely to lead to complete obstruction; and, in consequence of the obstruction being complete, to collapse of the air vesicles, and pulmonary lobules, rather than emphysematous enlargement. It may at first strike the mind of the reader as paradoxical thus to attribute two lesions directly opposite in their character, viz: emphysema and collapse, to the same, pathological source, viz: capillary bronchitis. But a little examination of the subject will serve to explain the apparent inconsistency. In certain cases of bronchitis in which the obstruction is due simply, or mainly, to the swelling of the membrane, and is incomplete, the air finds access to the cells in consequence of the power of the inspiratory act being sufficient to carry it there in spite of the narrowed passages; but it is not readily expelled from the cells, because the obstacle afforded by the narrowed tubes is too great to be fully overcome by the relatively weaker act of expiration. As a necessary result, over-distension of the cells ensues, and, if sufficiently continued, emphysema, or permanent enlargement of the cells, takes place. On the other hand, if, in addition to the diminished calibre of the bronchial tubes, they are obstructed by plugs of mucus, there follows total obstruction in a portion of the tubes to the entrance of air into the

cells *with inspiration.* The obstacle is now especially present in inspiration, this act forcing the plugs of mucus into the smallest extremities of the tube. But in expiration the force of the air already within the cells tends to remove the mucus from the smaller, to the larger tubes, and the resistance is therefore much less, and perhaps but slight. As a consequence of this less, or slight obstruction *in expiration*, the cells empty themselves of their contained air, and become collapsed, the total obstruction in inspiration, preventing them from becoming refilled. The plugs of mucus, in short, act precisely as *ball valves*, opposing the passage of air *into* the cells, but permitting its escape *from* the cells. Under these circumstances the lesion directly opposite to that of emphysema occurs, viz: collapse.

A late writer, Dr. W. T. GARDENER, accounts for the production of emphysema by regarding it as a secondary result of collapse of more or less of the pulmonary lobules.* He supposes, that, in consequence of obstructions in the bronchial tubes, collapse of the cells takes place in the manner just described, and, as a consequence of this collapse, an additional burthen being thrown on the non-collapsed vesicles, the latter become over-distended, or emphysematous. It is perhaps sufficient to say with respect to this theory, that, were it correct, in cases of chronic pleurisy in which the entire lung on one side is compressed into a small solid mass, we should expect emphysema of the lung on the side unaffected with pleurisy to be an uniform result; and it is certainly not true that chronic pleurisy leads, thus, to emphysema.

That chronic bronchitis is involved in the production of emphysema is rendered probable by the fact of the co-existence of the two affections very frequently, if not generally, in cases of the latter. In the three cases reported in this article, more or less bronchitis, evidenced by cough and expectoration, had existed from the date of the symptoms of the emphysema. Now, it is more reasonable to suppose, if there be a relation of cause and effect between the two affections, that the emphysema is due to the bronchitis, than that the bronchitis supervenes on the emphysema. With reference to this subject it would be desirable to determine in a series

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of cases which affection took precedence of the other, or in how large a proportion of instances chronic bronchitis existed during the development of emphysema. Information, as positive as is to be desired, on these points is not easily obtained, inasmuch as, in most of the cases coming under observation, the affection has already existed for a long time, and the memory of the patient with respect to the circumstances attending its development may not be altogether reliable. Moreover, the affection, in a large proportion of instances, is developed gradually, and the earliest symptoms extend backward to youth, or childhood.

But bronchitis is not the only morbid condition involving a degree of obstruction not sufficiently great to deprive the cells of inspired air, but sufficient to keep the cells distended by interfering with the expulsion of the air from the cells by expiration. Spasm of the muscular fibres entering into the composition of the bronchial tubes will lead to the same result. The latter is the morbid condition constituting pure *Asthma*. So soon as emphysema began to be studied, it was found that it was very frequently associated with asthma. These two affections evidently sustain to each other some close relation. The opinion held by LOUIS, and others, is, that asthma is incidental to the emphysema, but there is good reason for believing that the reverse of this is true, viz: that the emphysema is the effect of asthma. In the cases now reported, asthmatic paroxysms occurred from the first evidences of pulmonary disorder, and this is probably the fact in the history of the disease in a large proportion of cases. We can understand why repeated attacks of asthma should induce emphysema. The mechanism is the same as when it is due to bronchitis without spasm. Moreover, bronchitis and spasm are frequently associated; or more correctly, spasm is often excited in connection with bronchial inflammation, although the latter is by no means necessarily involved. On the other hand, no reason can be assigned why the existence of emphysema should give rise to spasm, although, of course, in proportion to the former lesion, the distress incident to the latter condition will be enhanced. In pure asthma the lung necessarily is in an emphysematous state, temporarily, during the continuance of the paroxysm—that is to say, the cells are distended. This distension, by frequent repetition has only to become

permanent, to constitute the lesion. On this question the following extract from a clinical lecture by M. TROUSSEAU, which has recently fallen under notice, is in point:—*

"An illustrious man, M. LOUIS, has confounded emphysema of the lung with asthma, attributing the latter to the organic pulmonary lesion. This opinion will not bear a minute examination, and the cause of its error is easily found. When M. LOUIS has examined old asthmatics in hospitals, he has found pulmonary emphysema. Not in his private researches, in young men, suffering from asthma, whom I have sent him, who have been examined by eminent men of art, has he been able to find a trace of emphysema. M. LOUIS is right when he affirms that emphysema exists after asthma, but he is wrong when he makes it precede that disease."

Waiving farther remarks (which have perhaps already been too extended) on the causation of emphysema, I proceed to give a brief summary, *First*, of the distinctive events belonging to the symptomatology of the disease; and, *secondly*, a *résumé* of the physical signs.

Habitual labor of respiration characterises the affection, the amount of effort manifested in the respiratory acts being commensurate with the degree and extent of the lesion. The labor is especially marked in *expiration*. This is a distinctive feature The difficulty is in expelling the air from the cells. When this difficulty is great the abdominal muscles are made instinctively to coöperate with the diaphragm in the endeavor to compress the lungs as much as possible.

The rhythm of the respiratory acts is altered, the expiratory act becoming longer than the inspiratory, and this inversion in the relative duration of the two acts is proportionate to the degree of the lesion. The relatively prolonged expiration is due, not alone to an actual prolongation of the expiration, but to shortening of the inspiration, and the lesion induces the latter just in proportion as it involves the former.

Anything which tasks unusually the respiratory function occasions increased labor, amounting, in severe cases, to paroxysms of dyspnœa of greater or less severity. Running, walking, especially up an acclivity, (as going up stairs,) or any active exercise, pro-

* Gazette des Hopitaux, Paris. Virg. Med. and Surg. Journal.

duces embarrassment proportionate to the lesion.* After a time, however, this, and other symptoms, are due, not altogether to the pulmonary lesion, but to the enlargement of the heart incidental to the lesion, the latter being produced by the obstruction to the pulmonary circulation incident to the lesion. The enlargement of the heart, occurring as the result of emphysema, commences with the right ventricle, for the obvious reason that the accumulation of blood consequent on the pulmonary obstruction first takes place in this cavity.†

The occurrence of bronchitis, however mild, and even pulmonary catarrh, are accompanied by notable disturbance of the respiration; which, also, is more or less distressing according to the degree and extent of the emphysema. Bronchitis, even if severe, except in the rare variety in which the inflammation affects the capillary tubes, as is well known, does not occasion embarrassment of respiration, if the lungs are otherwise sound. The explanation of the suffering which it occasions in the emphysematous state is obvious. Emphysema compromises the capacity of the lungs for respiration in the modes already mentioned. In consequence of this lessened capacity, the patient when free from bronchitis, or any superadded affection, is compelled to use the organs fully, to their utmost ability, and with more or less labor, in ordinary respiration. Now, if the lungs are sound, in ordinary respiration, all the air vesicles are not expanded. In other words, a healthy person has more lung capacity than he requires for ordinary use. He has a superfluity of cells, which are held in reserve for any emergency. Bronchitis involves more or less tumefaction of the bronchial mucous membrane, and consequent diminution of the calibre of the bronchial tubes. But this is not felt, inasmuch as a portion of the reserved cells are brought into use to compensate

*In a case which came under the writer's observation, the patient complained that he could not laugh heartily without losing his breath and suffering from dyspnœa. Deriving much of his enjoyment from telling, and listening to good stories, he felt this inability to be one of the most serious of the inconveniences attending the disease.

†Dr. WALSHE states that the number of respirations per minute is not increased, but diminished in emphysema. This is probably true of some cases, but that it is not the rule, is shown by the cases reported in connection with these remarks.

for the contraction of the bronchial tubes; a little more force of inspiration is instinctively employed, and no dyspnœa is experienced, nor any evidences of difficulty manifested. On the contrary, the emphysematous patient affected with bronchitis, has no reserved capacity of lung for this, or any other emergency. The organs in his best estate being taxed to the extent of their ability to perform the function of hematosis, whenever the supply of air is diminished the want of breath is felt, and the symptoms incident to dyspnœa are present. The effect of bronchitis occurring in connection with emphysema is illustrated in each of the three cases reported, especially in the last of the three cases, the difficulty of respiration in that case being very great and apparently placing the life of the patient in danger. If I have succeeded in making this explanation clear, it will be understood why it is that bronchitis is a very different affection when it is associated with a considerable amount of emphysema, from what it is when it occurs in a healthy person.

Capillary congestion most marked on the face; next, on the upper extremities, and more or less over the whole body, is a symptom, unless the lesion be slight. This symptom is proportionate to the secondary heart affection, and its presence in a marked degree is one of the evidences of the latter complication. The symptom is especially marked during paroxysms of difficult respiration, and may then, and in some instances habitually, be conjoined with more or less lividity of the prolabia.

The expression of the patient is anxious, and denotes distress in proportion as the respiration is laborious, and the sense of breathlessness felt. It will, however, often be observed that, owing to the influence of habit, patients are not conscious of the respiratory effort which is apparent to others. It is remarkable that persons in whom the lesion exists in a degree to cause habitually labored respiration, enlargement of the heart also existing, manage to continue in occupations requiring considerable muscular exertion. This was true in the first and third of the cases reported in connection with these remarks.

Smallness and feebleness of the pulse characterize the affection, and these characters are more marked in proportion to the amount of heart complication.

Coolness or even coldness of the surface is another symptom, bearing some relation to the emphysema, but more to the consecutive disease of heart.

As in all affections involving difficulty of respiration, the embarrassment is greater in the night, than in the day time; and paroxysms of dyspnœa oftener occur during the night.

Paroxysms are excited by any thing overtasking the respiratory function, but they are especially due to catarrh, bronchitis, and spasm of the bronchial muscular fibres. The odor of feathers, which provokes attacks of asthma in some persons who are not subject to that disorder under other circumstances, in one of the cases reported, always occasioned insupportable dyspnœa.

More or less cough and expectoration, certainly in many cases of emphysema, are habitual; and the acts of coughing are characteristic. The coughing is violent, spasmodic, resembling, as stated in the notes of one of the reported cases, pertussis exclusive of the sonorous inspiration. The existence of cough and expectoration, conjoined with the difficulty of determining by means of physical signs in this affection, the presence of a tuberculous deposit, would lead us to have apprehensions of the latter oftener than we do, had not statistics determined that tuberculosis and emphysema are not often associated. The state of the lung in emphysema appears to exert a protective influence against the deposit of tubercle.

The symptomatology of emphysema is quite significant in a diagnostic point of view, but taken in connection with the physical signs, the discrimination of the disease is positive and easy. *Inspection* furnishes some characteristic appearances. In the variety of emphysema characterized by increased volume of the lungs, the chest is permanently distended. This enlargement is general, or partial, according as the emphysema affects the whole, or a portion of the pulmonary organs. It is rare that lesion is universal, and it is seated at the upper portion of the lungs in the great majority of cases. The prominence is then marked in the supra clavicular and infra clavicular regions. The parts here may not only be prominent, but bulging. It is rare that the lungs on both sides are affected in an equal degree, and the lesion may be limited to one side. In the three cases now reported the upper portion of

the lungs on both sides were especially affected, and on one side more than the other, the latter is generally the fact. It is very rarely the case, if ever, that the lesion is equal in degree on both sides. In two of the cases the greater amount was on the right, and in the other case on the left side.

The expansive movement with inspiration is limited, becoming sometimes almost null. The chest is permanently expanded. The increased volume of the lungs resists the forces by which the contraction of the chest in expiration is produced. Hence, of necessity, the expansion is correspondingly diminished. The elevation movement is alone conspicuous, and this, especially in a paroxysm of labored respiration, becomes marked. The chest, in the language of Dr. WALSHE, already quoted, "moves upward as in one piece." Owing to the forcible contraction of the diaphragm acting upon the false ribs, the lower part of the chest appears to contract with inspiration. This is apparent sometimes, not real, owing to the intercostal spaces being drawn inward, exclusive of the ribs, but the latter, in some instances, are also contracted, as was exemplified in one of the reported cases.

Different observers express different opinions respecting the permanent effect on the intercostal spaces. Dr. STOKES stated that the normal depressions between the ribs are preserved in this disease. This may be true, as remarked by Dr. WALSHE, when the emphysema is of the atrophous kind, and the volume of the lungs is not increased. It is certainly not true of cases characterized by a marked increase in the volume of the lungs, as was illustrated in each of the cases now reported. A positive statement on this point, even in opposition to so high an authority as Dr. STOKES, is the more admissible, inasmuch as the matter is one of simple clinical observation.

If the lesion be extensive, affecting both sides, the form of the chest is notably altered. The anterior flattening is lost. The thorax, as stated by ROKITANSKY, becomes *barrel-shaped*, the ribs pursue a less oblique direction, approximating to a horizontal line, and the same change is observed, after death, in the direction of the fissures dividing the pulmonary lobes.

Percussion elicits an abnormal degree of resonance. The vesicular quality is not lost, so that the sound is readily distinguished

from the tympanitic sonoriety transmitted from the abdomen, or due to air in the pleural cavity, in pneumo thorax. The increased proportion of air to the tissues, and the tension of the thoracic walls causes an admixture of tympanitic and vesicular resonance, giving to the percussion note a ringing, drum-like character. This modification, and the abnormal sonoriety will be relatively more marked, of course, on the side in which the emphysematous distension is greatest.

The signs determined by *Auscultation*, taken in connection with those obtained by the foregoing methods, are distinctive. If the patient, at the time of the examination, labor under bronchitis, the bronchial râles are usually extremely loud, especially the sonorous and sibilant râles. They are frequently heard at a distance. They may accompany both acts of respiration, but they are louder and longer with the act of expiration, and sometimes limited to this act.

When the conditions producing the bronchial râles are absent, the respiratory murmur, if present, is characterized, *first*, by an abnormal diminution in intensity. It may be inappreciable, as in the third of the reported cases, after the patient had recovered from the attack of bronchitis. If appreciable, a *second* modification consists in an alteration of the rhythm. The inspiratory sound is shortened, and is heard only at the end of the inspiratory effort. The expiratory sound is prolonged, exceeding, by several times, the sound of inspiration. The inspiratory sound may be absent, and the expiratory, only heard; or, on the other hand, the only sound heard may be a shortened, feeble, inspiratory murmur. The change in rhythm, first pointed out, is analogous to that occurring both in pneumonitis, and the stage of crude tuberculosis, due in these affections, to solidified lung. This analogy, however, cannot lead to error of diagnosis. The bronchial respiration of pneumonitis and tuberculosis has other characters, viz: elevation of pitch of sound, the expiration higher in pitch than the inspiration, and, usually, greater intensity in both the inspiratory and expiratory sounds.* Moreover, the associated signs, viz: dullness or flatness on percussion, (the evidences of solidification) are in direct contrast with the abnormal resonance in emphysema.

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* See prize Essay by writer.

Bronchophony and vocal fremitus, in emphysema, are either wanting, or slight. These signs, also, are generally marked in diseases involving solidification.

To determine, by means of physical signs, the existence and degree of the enlargement of heart incident to this disease, is much more difficult than to make the diagnosis of emphysema. If the emphysema be extensive, and affect the left side, the heart is overlapped by the overdistended lung, and removed from its normal situation. An impulse is frequently not to be felt. The increased sonoriety of the chest, and the disparity, in this respect, of the two sides, owing to difference in the degree of emphysema, interfere with the attempt to define the boundaries of the organ by percussion. We are to be guided, in forming an opinion with respect to this complication, in a great measure by the symptoms. Palpitation, if a prominent symptom, is strong evidence, but by no means conclusive. I have known this symptom to be so prominent in a case of senile emphysema, that the attending physician supposed the patient to labor under a heart affection, and this alone. I was desired to make an autopsy after the termination of that case, with a view to the discovery of heart disease, but there proved to be a very remarkable degree of atrophous emphysema, which had been rapidly developed, and the heart was sound. Great feebleness of the pulse, amounting sometimes to extinction at the wrist (as in one of the reported cases), marked capillary congestion of the surface; and especially lividity, in connection with palpitation, render it pretty certain that more or less enlargement of heart co-exists.*

Emphysema is an incurable lesion. If atrophy and dissolution of the cell walls have taken place, either as a point of departure for the disease, or consecutively to dilation, it is sufficiently clear that so far as this is concerned, restoration is impossible. Lung

* The reader will bear in mind that in this account of physical signs I have had reference particularly to emphysema, characterized by increased volume of the lungs. In emphysema commencing with atrophy, and not accompanied by marked increase of volume, the physical signs would not be in all respects the same. The differences as respects enlargement of the chest, less sonoriety on percussion, and depression of the intercostal spaces (to the latter, allusion has been made,) will at once suggest themselves. As regards the more distinctive of the physical signs, and symptoms, the two forms of the disease are identical.

structure cannot be reproduced. But so far as the lesion involves dilatation of the cells it is by no means certain that, although a complete cure is not to be expected, a considerable diminution of the lesion may not take place. It is obvious that the management of the disease does not embrace any special medication. We cannot expect that any remedy will act upon the lungs to obviate directly the effects of a mechanical agency—for the mode by which the dilatation of the cells is produced is mechanical. The curative indications relate to, *first*, removing, if possible, the morbid conditions which produce and perpetuate the lesion. We have seen that bronchitis and spasm are the morbid conditions which especially stand in the relation of causes to it. So far as we can control these conditions we are able to prevent the development, and limit the progress of emphysema. *Second*, It is important to avoid every thing which overtasks the respiratory function, and occasions temporary repletion of the cells, evidenced by labored respiration, or dyspnœa. Occupations requiring muscular effort, and active exercise of any description, must tend to confirm and increase the lesion. So any thing interfering with the respiratory function, as the impure atmosphere of crowded rooms, or the inhalation of irritating substances, will have a similar effect. Excitement of the circulation by the use of stimulants, or by other cause, will, measurably, do injury in a similar manner.

It is foreign to the purpose of this article, to consider, in detail, the measures which may be involved in fulfilling these indications; and in connection with remarks addressed to the practitioner of medicine this would be superfluous.

In dismissing the subject, the following practical consideration is submitted as one which should commend itself to the thoughts of the medical practitioner: In view of the probability that, in many instances, before emphysema has advanced to an extent leading, necessarily, to distressing and serious consequences, judicious management may greatly retard, if not arrest its progress, it is a matter of great importance, in the first place, to appreciate the pathology and causation of the affection so far as our existing knowledge enables us to study the lesion in these aspects; and, in the second place, to be familiar with the symptoms and physical signs with reference to an early and positive diagnosis.

ART. II.—ON THE USE OF CHLOROFORM OINTMENT IN RIGIDITY OF THE OS UTERI.

BY G. W. RONALD, M. D., PHYSICIAN TO THE LOUISVILLE ALMS-HOUSE.

THERE are with few exceptions, no accidents to which the parturient woman is subject that inflict upon her a greater amount of suffering than obstinate rigidity of the os uteri. It not unfrequently baffles the skill of the oldest and most experienced practitioner for a long time; and were we to judge from the pain dependent upon this condition of the organ, we should very readily suppose that the life of our patient was in the most imminent danger. This state of affairs as compared with the number of births, is fortunately of rare occurrence; yet it is of sufficient frequency to make the subject one of considerable interest and importance in practice. Various causes have been assigned, by different authors, for rigidity of the os uteri; some attributing it to mechanical contrivances used for supporting the organ, others to the injudicious use of escharotics, whilst others again contend that morbid irritability is the principal cause, and this last conclusion seems to us more rational than either of the others. It is not my intention, however, to enter into an inquiry as to the cause of the difficulty; but to call the attention of the profession to the use of chloroform ointment, as I have found it the most expeditious, reliable, and safe mode of overcoming it. I do not pretend to say that it is a specific, for my limited experience in its use would not justify such a conclusion, having used it in but a few instances, but in these, with the most gratifying results. The first time that I made a trial of it was in the Louisville Almshouse, on the 28th day of January, 1852.

Mrs. C., aged twenty-three, a seamstress, was admitted on the 25th, reputed to be of respectable family, full and plethoric habits, nine months advanced in pregnancy with her first child. She was complaining of pain in the left side—considerable œdema of the lower extremities—bowels constipated, for which oil had been

repeatedly taken, urine highly colored and scanty. Ordered a Seidlitz powder to be given, and as soon as it operated to be followed with a teaspoonfull of sweet spirits of nitre every two hours. At 7 o'clock on the morning of the 28th, she was taken in labor. I saw her at 10 o'clock. Upon making an examination, the os uteri was sufficiently dilated to ascertain a head presentation, though the membranes were not ruptured. The pains were powerful and strong, continued to return at short and regular intervals, and I consoled myself with the thought that I should be detained but a short time, yet hour after hour passed and still the os uteri had made no perceptible progress towards dilatation. The woman had become restless and despondent, intense thirst, sickness at the stomach with constant retching, throwing off the water almost as soon as swallowed. If the os uteri was touched she complained of pain, it was hot and unusually rigid, feeling as if a tight band or cord had been drawn around the neck of the organ, which was resisting and unyielding. Having waited upon nature to overcome the difficulty until the patience of the woman, as well as of her attendants was completely exhausted, I determined to resort to some of the remedies usually recommended. Accordingly the arm was tied, and blood abstracted to approaching syncope. Tartrate of antimony, and the warm bath, all in their turn were brought into requisition; yet the condition of the organ had changed but little, though the membranes at this time had given way and discharged a portion of liquor amnii. These means having failed to procure the desired effect, I went to the office for the purpose of making an ointment of belladonna, but was disappointed in finding none in the house. When I was in the act of sending to town for the article it occurred to me that the ointment of chloroform might as readily relieve rigidity of the os uteri, as contraction of the muscles of the extremities, which I had often seen it do, having had it applied to my own person in an attack of cholera, by my friend and preceptor, Dr. T. S. BELL. Taking this view of the subject, I determined to try it, though not without some doubts and apprehensions, for I knew not what effect it might have upon the child, or upon the hot and irritable os uteri. The ointment was prepared by taking one drachm and a half of chloroform and thoroughly incorporating it with one ounce of

simple cerate; which was freely applied principally upon the external surface of the neck of the organ. At the time of the application the woman complained of slight smarting pain which passed off in the course of a few minutes, and had it been applied at the commencement, or during contraction of the organ, she would have made no complaint, as was fully proved in the subsequent cases in which I used it. Upon making an examination, twenty-five minutes after the application of the ointment, I was surprised to find the os uteri dilating rapidly, soft and pliant; and in one hour and twenty-seven minutes after its first application the woman was delivered of a fine, robust and healthy boy.

I am well aware that any manual interference on the part of the practitioner, in order to terminate protracted or lingering labor, is condemned by some of the ancient writers upon obstetrics. Dr. BLUNDELL, in his valuable and scientific work reminds us in every chapter that "meddlesome midwifery is bad." This I suppose no one will doubt. But surely no well informed physician, in this age of improvement and advancement, both in the arts and sciences, when every thing seems to be moving on with almost telegraphic speed, will condemn the use of any remedy that we may have at our disposal for shortening the pangs of one of the most painful processes in the parturient woman.

ART. III.—REMARKS ON PLEURODYNIA.

BY WM. J. CHENOWETH, M. D., OF DARWIN, ILLINOIS.

I have observed in quite a number of cases of intermittent fever, that Pleurodynia accompanied them. In nearly every case that I have been called on to treat the impression of the friends or parents was that the patient had pleurisy or pneumonia, and they were rather incredulous when told that there was nothing serious the matter. I was more forcibly reminded of this form of Pleurodynia by a Homœopathist who insisted that he could cure every case of pneumonia he met, in two or three days, and detailed the case of a blacksmith who was attacked suddenly and violently with pain in his side increased by taking a long breath and who was relieved in less than twenty-four hours so as to be able to go to work. I suggested that it might have been neuropathic, but although he admitted that he did not make a physical exploration of the chest with the view of determining, yet he was perfectly satisfied of the nature of the affection; he had seen it often, and had been in the habit of treating it for years.

In Kentucky I had often seen pleurodynia, but I had never seen it assume an intermittent form, and when I first met the disease here I was surprised to find that it did not yield to rubefacients and rest, but seeing it assume a periodic form I treated it successfully with quinine, and the disease being of frequent occurrence and always periodic I was finally led to look upon it as one of the protean forms of miasmatic fever.

On the 9th day of Dec., 1853, I saw a boy six years old who had suffered for about two months with an intermittent fever, but was now convalescent. He was taken, a few hours before I saw him, with severe pain under his right nipple which extended to the scapula of that side. He would cry out at every inspiration. I examined him as carefully as I could but did not detect the least abnormal sound in his respiration, the vesicular murmur was clear and distinct. I ordered him to be rubbed over the affected side

with volatile liniment. The next evening he was suffering as on the previous day, having been attacked about the same hour. I now gave him quinine and ordered the liniment to be rubbed over the spine. I heard no more of the pain for about two weeks, when he was again attacked as before, and this time it yielded at once to the same remedies I had before employed.

In February, 1854, a Mr. Adams called at my office to be cured of a quartian ague accompanied with a distressing pain in his left side and under the scapula of the same side; I rubbed a liniment composed of spirits of turpentine and chloroform over the spine, which shortened the paroxysm more than one half. I ordered him to have his spine rubbed at the next expected time of the chill; he did as directed and had neither chill nor pain. But it again returned in a few days and was again cured in the same manner.

In the early part of March I went three miles to see a boy eight years old, said to have pleurisy. I found him suffering with an intermittent pleurodynia which yielded readily to quinine.

I was called on to prescribe for a boy twelve years old, in town, on the 12th of April; the boy's father had been at my house several times during the afternoon, and was very impatient to see me, but having gone to the country I did not return until after dark. I went to see him as soon as I returned, and found him in great distress, scarcely able to draw a breath without crying, and the family very uneasy, thinking that he had the "winter fever." On examining him, I found the same state of affairs as in the last case, only more aggravated, the fever and pain lasting from noon until near midnight, but quinine arrested the fever, and in less than forty-eight hours he was running about town.

I have met with quite a number of similar cases, but these are enough to warrant the conclusion that unless the patient be carefully examined, it is easy to make out a case of pleurisy or pneumonia where none exists, and to cause the patient a week's sickness by depletion, when we are called on to treat a simple intermittent pleurodynia.

Bibliographical Notices.

ART. IV.—*History of the Epidemic Yellow Fever at New Orleans, La., in* 1853, by E. D. FENNER, M. D.

Tableau of the Yellow Fever of 1853, *with Topographical, Chronological and Historical Sketches of the Epidemics of New Orleans, since their origin in* 1796, *illustrative of the Quarantine Question*, by BENNET DOWLER, M. D.

WE resume in our present number the analysis of the histories of Drs. FENNER and DOWLER, and shall make such extracts from both, without much comment, as may suffice to illustrate the several remaining topics of which they treat.

Both papers contain very full statistics of the epidemic; these have been collected with great care and are as accurate as statistics usually are, under more favorable circumstances. There is some discrepancy in the figures of the two, due partly to the difference in the dates, but this does not materially alter the result. We shall transfer the statistics of Dr. FENNER showing the number of cases that occurred and the mortality, in the five months from the 1st of June to the 1st of November.

"*Mortality of the Epidemic.*"

Months.	Total Deaths.	Yellow Fever.	Other Diseases.	Not Stated.
June,	665	49	581	45
July,	2077	1407	559	112
August,	6235	5189	689	357
September,	1681	1070	489	113
October,	676	265	438	73
	11,335	7870	2765	700

"This table presents the deaths from Yellow Fever, as shown on the *burial certificates*. It is generally admitted that *six-sevenths*

of the certificates in which the cause of death was *not stated* during the epidemic should be added to the yellow fever list, which, being 600, would make that list amount to 8,470. (The table of Dr. DOWLER makes the number 8,400.) Taking this as correct, and having *some certain data* to go by, we may now make an *approximative* calculation of the whole number of cases of yellow fever that occurred in the city during the five months above specified, and also the general rate of mortality for the whole.

	Cases.	Deaths.	Loss per cent.
Charity Hospital,	3052	1765	46
Howard Association,	10500	3150	30
Maison de Santé,	338	97	28
City Workhouse, 1st dist.	89	13	15
Touro Infirmary,	523	213	40
Boy's House Refuge,	21	6	28
Girl's House Refuge,	21	1	5
City Prison, 2d dist.	30	5	16
Lunatic Asylum,	8	0	0
Board Health Infirmary, No. 1,	343	155	45
" " " No. 2,	423	207	48
Totals,	15,858	5,613	311

"We thus have 15,858 cases, with a loss of 5,613, which is at the rate of 35½ per cent., inasmuch as all these deaths were certified by physicians; when deducted from 7,870, the total of the same class, it leaves a balance of 2,257 deaths, to be distributed amongst other hospitals and infirmaries, asylums and private practice. If we consider these 2,257 deaths to be 20 per cent. of the whole number of cases treated in the last mentioned quarters, it would show 11,285 cases, which added to 15,858, the number of cases above ascertained, would give a probable grand total of 27,143 cases treated in the city during the time specified.

"Estimating the probable population of the city at 100,000, during the epidemic, it thus appears that upwards of *one-fourth* of them had the fever; and of those who were attacked, within a fraction of 29 per cent. died, being nearly 8 per cent, of the estimated population. Of course these results would have to be different if we either raise the amount estimated for the population, or add to the list of *certified deaths* by yellow fever six-sevenths of those in which the cause of death was *not stated* during the prevalence of the epidemic. Every other city or town visited by this epidemic was at least *decimated*, and some of them more."

"The great epidemic of 1847 only caused about 3000 deaths in this city and Lafayette, which were then separate, but are now united."

During the prevalence of yellow fever, which by its malignity and unprecedented mortality almost exclusively absorbed public attention, other forms of fever, such as typhus, typhoid, remittent, intermittent, congestive and scarlet, nevertheless existed, and contributed to swell the number of deaths; the *mortuary* reports of the Board of Health, during the months of June, July, August, and September, show that "in the month of June the deaths from all the fevers specified amount to 143, of which yellow fever was 46. In July, all fevers 1482, yellow fever 1380. In August, all fevers 4962, yellow fever 4791. In September, all fevers 779, yellow fever 722. The total number of deaths from *all fevers* during these four months, as published, was 7472; of which 6945 died of yellow fever, and 527 died of other types."

"From these *mortuary* statistics it will be seen that during the reign of the *great epidemic*, which slew its thousands, people likewise died of *all sorts of fevers*. The statistics of the *living*, which I shall now present from the Charity Hospital, also show a similar variety of fevers prevailing together, though in somewhat different proportions." We omit the table of patients received into the Charity Hospital during the four months specified, but learn from it that there were admitted of *all diseases* 6037, of which 4370 were for *fever of all kinds*, 3052 were yellow fever, 942 were intermittent, and a varying proportion of the other types of fever, for the several months.

Dr. DOWLER presents some interesting details touching the prevalence of other diseases and the rates of mortality from them during the existence of the epidemic. He says, "as the epidemic increased the mortality from other causes was little affected, particularly after the month of July. For five months, ending June 25th, the average weekly mortality from yellow fever was about 4, from other diseases 116; the next five weeks gave an average for yellow fever of 280 per week, other diseases 160. The next four weeks ending August 28, gave a yellow fever average mortality of 1,211 per week, or by weeks respectively, 967, 1,288, 1,346, 1,243, aggregate 4,844; while for the same time, the average from other causes was 157, not including an average weekly mortality of 71, reported as deaths from causes unknown, and generally supposed to have been deaths from yellow fever. During

the next four weeks ending September 28th, the average weekly deaths from yellow fever was nearly 200, while for the same time the average from other known causes gave 65, and deaths from unknown causes a fraction over 16."

"From the last week in May, when the weekly mortality was for yellow fever 1, and for all other diseases 139, the non-yellow fever mortality vibrated but little until after the week ending the 23d of July, having ranged from its maximum 158, for the week ending 25th of July to its minimum 129, for the week ending July 9th, but for the week ending July 23d it rose to 188; the next week it reached its maximum for the season, that is 192, at which time the epidemic was rapidly increasing, 1,409 having died, 1,121 in the two preceding, and 1,325 in the three preceding weeks. About the 9th of July, the epidemic, as such, began, so that the ratio of mortality from causes other than yellow fever, was not much disturbed during the greatest fury of the epidemic until the week ending September 4th, after which it declined to 102; but for the next week it rose to 120, nine less than on the 9th of July, when the epidemic appeared, and 19 less than the week ending May 28th when the first death from yellow fever was reported. In the week ending the 21st of August, which gave the maximum of deaths from yellow fever, that is 1,346, the mortality from other diseases was but 152, exactly the same as for the week ending July 2nd, when, as yet, all the deaths from yellow fever beginning with May, were but 47. So that the ratio of mortality, independent of the yellow fever element during its unparalleled prolongation was but little changed except during the last two precursory weeks of July. Thus the epidemic caused but a slight oscillation among other maladies, while its pestilential waves rolled over the devoted city."

"If the epidemic be considered in a larger view, by months, it will be seen that its collateral influence is scarcely manifest. Mortality from causes other than yellow fever, for June, 581; for July, 559; for yellow fever for June, 40; for July, 1,406, not including 45 for the former month, and 112 for the latter, under the head of unknown or *not stated*."

"The greatest number of deaths in any one day, 283, of which 239 were from yellow fever, occurred on the 22d of August. The greatest number of deaths from the fever, in any one month, was in August, amounting to 5,189, or by adding the unknown, 5,242; by adding all the deaths, 6,235; an average exceeding 201 per day; about 9 every hour; one every six or seven minutes! for a whole month!!"

Dr. FENNER gives several tables showing the number of cases of the various forms of fever and their mortality, and reiterates the

opinion previously stated as to the probable identity of cause. "It is quite common to see these various types of fever interchange or run into each other, just as is seen in the country where the intermittent and bilious remittent are supposed to originate from the same remote cause."

Dr. DOWLER furnishes some interesting facts in regard to the ratio of mortality of the sexes and among children. Upon these points Dr. FENNER gives no information in detail. Dr. DOWLER says, "according to the report of the Howard Association, published late in December, the Society had under its care during the epidemic of 1853, no less than 11,088 yellow fever patients—5,203 males, 5,885 females—of whom 2,942 died and 8,146 were cured. The predominance of female patients in the above enumeration is remarkable, inasmuch as that sex is the least susceptible to the yellow fever, and contribute to the mortality from this disease in a ratio greatly inferior to males. The most probable explanation is this—females preferred the Howard Hospitals to the Charity Hospital, and the City Hospitals established by the Board of Health."

"In order to ascertain approximatively the proportion between the mortality of the sexes, I selected the first day of August, counting all the interments from fever, as distributed among the letters of the alphabet, and among the following cemeteries, in Mr. MAGINNIS' List of Interments:"

	Males.	Females.
Cypress Grove, No. 2,	3	2
Protestant,	1	1
Charity Hospital,	21	9
Lafayette,	24	11
St. Patrick's,	15	10
St. Vincent,	13	8
Total,	82	41

"Hence it appears that the mortality of females, is, for 1853, exactly half as great as that of males. This high ratio of female mortality is, however, one of the most extraordinary features of the late epidemic. Of 1,450 who died of yellow fever in August, September and October, 1841, but 220 were females, or nearly one in seven. The ratio of mortality among children will probably be found enormously high from fever in 1853, compared with preceding years. This will appear obvious by Mr. MAGINNIS' list, compared with the following extensive analysis of the epi-

demic of 1841; thus—I made thirty-three series, each consisting of thirty persons, I then took the youngest one in each series, (among these 990 dead) which gave these ages: 15, 17, 17, 2, 5, 20, 19, 16, 20, 17, 15, 17, 18, 19, 8, 2, 7, 18, 18, 19, 8, 6, 8, 2, 15, 3, 18, 14, 2, 18, 3, 5, 19. Scarcely an infant in the whole series!"

"In order to test approximatively, the ratio of infantile deaths from fever, I counted the ages of all fever victims who were interred in the following cemeteries, on the 10th of August, namely, Cypress Grove, No. 1 and No. 2, and St. Patrick's, amounting to eighty-nine known ages, and two called 'infants,' (say ninety-one) among which were two aged 2; one aged 3; one 4; which with the two infants, make six out of ninety-one—a result which could not have been anticipated from the history of anterior epidemics, as the very young and very old, as well as women and negroes, had always suffered less than other classes."

The observation of Dr. FENNER accords with the statistics of Dr. DOWLER in regard to the prevalence of the disease among children in 1853; he remarks, "one of the most extraordinary features of this epidemic is presented in the fact that the natives of the city, *both white and colored*, have suffered severely, and many of them died of it. This is generally admitted, and beyond dispute. Children who were born since '47 have suffered most; but many born previous to that time likewise suffered, and some of them died of black vomit. It may be stated generally, that all children, and young persons in the city, who had never had yellow fever previously, were attacked this year. Of course there are some exceptions to this, as there are to every general rule."

Although the mortality was greater among negroes during the epidemic of 1853 than was ever before known, it was not sufficient to invalidate the opinion based upon past experience as to the immunity enjoyed by the African race. Upon this point, Dr. FENNER speaks in general terms to the following effect: "This epidemic affected unacclimated negroes, or those who had never had yellow fever before, equally as generally as it did the white population, though not so severely. This is equally true of the mixed races generally. It is a well established fact that there is something in the negro constitution which affords him protection against the worst effects of yellow fever; but what it is I am unable to say. During an epidemic he will take the fever almost, if not fully as readily as the white, but it will be altogether milder and less dan-

gerous in its tendency. In short, it will correspond more exactly with the bilious remittent fever that prevails in the country, and requires precisely the same treatment. And yet this type of fever in the city negro must be produced by the very same cause that gives rise to malignant yellow fever in the white race. Occasionally we see the hemorrhagic diathesis of yellow fever displayed in the negro, but it is by no means common. The least mixture of the *white race* with the *black* seems to increase the liability of the latter to the dangers of yellow fever; and the danger is in proportion to the amount of white blood in the mixture. Very few negroes ever die of yellow fever in this city; but I learn that a considerable number have been lost on the plantations this year. The cause of this may be readily imagined when it is recollected that yellow fever never prevailed on the plantations before, and of course most of the physicians were not familiar with its treatment."

"I consider the danger to negroes from yellow fever to be no greater than that from *bilious fever* in the country, and *not half so great as from congestive intermittent.*"

Dr. DOWLER presents more explicit testimony, in the form of statistics, in regard to negro immunity. "Although non-creolized negroes are not exempt from yellow fever, yet they suffer little from it, and very rarely die. On the other hand, they are the most liable to suffer from cholera. As an example of the susceptibility of this race, take the year 1841; among 1,800 deaths from yellow fever, there were but three deaths among the blacks, two having been children, or 1 in 600, or 1 in 14,000 of the whole black population."

"The same immunity from death in this disease is enjoyed throughout the yellow fever zone by the black race; for example, in the epidemic in Charleston in 1838, the official report shows that among 538 interments of yellow fever subjects, only seven were blacks, or about 1 in 50, and these were, probably, as usual, not city creoles. This is, however, an extraordinary mortality compared with the same class in New Orleans."

"In order to ascertain the proportional number of deaths from fevers among blacks in 1853, I adopted the following plan, comprehending the six months ending November 1st: I analysed more than the one-fifth of the list of deaths by Mr. MAGINNIS, beginning with the letter A and ending at D, running through all the twelve

cemeteries for the six months. The result is fourteen deaths among blacks from fevers of all kinds; two of whom, a child aged eight days, and one aged ten months, were born in New Orleans; of the residue four are mentioned under the term "child," one aged nine months, and one two years; one nine years; the birthplace of the residue, one excepted, unknown The two born in New Orleans that died, aged eight days in the one case, and ten months in the other, were doubtlessly not the children of creolized parents, many of whom are brought from more northern States and kept here for sale, not only to the citizens of the city, but to planters in the country. Among thousands of these, it would not be surprising if fourteen should die of all kinds of fever in six months, if no epidemic had existed, and if the entire race had been unsusceptible to yellow fever. In round numbers the total mortality had been 2,500—that from yellow fever about 2,000—during the period above indicated, in which fourteen blacks, many of whom were infants, died of fevers of all varieties, in a black population of 30,000. Had these deaths all been from yellow fever, they would not, so far as this worst of epidemics goes, affect the argument that while the black race is susceptible to yellow fever, if born out of the city, death is, from the disease among them, a very rare occurrence; a majority of city practitioners never, perhaps, saw a single fatal case."

This immunity of the black race is wholly incompatible with the rumor, which prevailed during the epidemic, that the disease was an "African Fever." Dr. FENNER scouts this notion and says, "I would like to know what is meant by the term. There is no part of Africa where so malignant a fever is generated as the yellow fever of America; and those who assert that this was an African fever, ought not only to point out its *distinguishing features*, but also show how it was introduced here. The truth is, the epidemic was nothing but an uncommonly malignant yellow fever, presenting all the characteristic symptoms of that disease as it is generally seen here, but in a more virulent degree."

Dr. DOWLER is equally positive on this point: he remarks that "it does not appear that yellow fever prevails under an African sun; although the epidemic in New Orleans in 1853 came well nigh getting the name "African yellow fever," "African plague," it was for weeks so called!

The African is the only race to which this exemption attaches; "the Necropolis of New Orleans represents all the fundamental types, if not every variety of the human race, Caucasian, Ameri-

can, Asiatic, and African—all of which except the latter—become the ready victims of yellow fever, the creolized excepted. I have seen in the same day, the copper colored American from the low lands of the Mississippi, and the Scandinavian from the icy mountains of Norway, dying of the epidemic. The Indian race is equally susceptible as the white race to yellow fever, although some writers have denied this."

The Howard Association had under its care, during the epidemic 11,088 patients; "of this number (5,845) much more than half were Irish; German, (2890) nearly a quarter; French 436; United States (716) less than one in sixteen of the whole. Hence, it appears that Ireland and Germany give 8,735; other countries 2,353."

"Omitting Spain and the United States, the yellow fever zone contributed but nineteen; the plague zone of the East, as Palestine and Greece, but seven to this formidable aggregate of 11,088."

Dr. DOWLER in his "Tableau of Creole mortality in 1853 from yellow fever," adduces exceedingly interesting statistics bearing upon the disputed question as to the liability of Creoles to this form of fever. Dr. D. is very decided in his opinion upon this question; he avers that "congenital city creolism, that is the constitutional modification incidental to the being born of Creole or thoroughly creolized parents, with continuity of city residence, exempts the individual from yellow fever with nearly the same uniformity that vaccination prevents the small-pox or the varioloid. The varioloid is, as all know, modified small-pox, happening to one who has undergone vaccination, or the small-pox previously, the frequency of which is probably as great as the frequency of yellow fever among city Creoles who have never absented themselves for one or more winters in Northern climates."

In order to comprehend the full and precise import of this opinion, it is necessary to understand clearly what Dr. DOWLER means by Creolism; he restricts the term in such a manner as to exclude many who have heretofore been loosely ranked as Creoles by writers on yellow fever. "In Louisiana, every native, be his parentage what it may, is a Creole. They are convertible terms."

"Although the word *Creole* in its usual acceptation means a white person, it applies to all races, as Creole negroes; it even

applies to the inferior animals and things; a creole chicken, egg, or cow, is worth nearly twice as much as one from a distant State; while a creolized horse, after considerable risk, becomes better, being larger, than a creole horse. City creolization, whether native or acquired is a practical distinction in the business of New Orleans."

"The word Creole is generally used in sense too latitudinarian for precise statistical investigation. It is the resident city Creole, not the Creole who migrates every summer to New York, London or Paris, that may hope for as good health as is possible to humanity, while two or three hundred others daily fall victims around him—a definition which excludes a great many called Creoles and one often forgotten, in writing on the subject of yellow fever. Hence arises many apparent contradictions among authors who use the word in different senses."

"In former, still more than in recent times, has this fundamental distinction been overlooked. In a great majority of the works on yellow fever in the West Indies, and even in Louisiana, where Creoles are said to suffer from this disease, the true explanation is, that these persons are *Creoles of the country, not of the city;* or at most, they reside in the latter occasionally, chiefly in the winter, and are, therefore, liable to the disease, though they usually have it in a milder form than strangers, and rarely die."

Dr. DOWLER divides Creolism into the three somewhat distinct varieties of urban or city, rural, and acquired. It will be perceived from the quotation made above, that immunity from yellow fever is enjoyed most largely and indeed almost completely, according to Dr. DOWLER, only by the native city creole, with a continuity of city residence. Country creoles are not so insusceptible; "all born beyond the limits of the city are susceptible to yellow fever on coming into the city or into a village where yellow fever prevails. In 1853, yellow fever has, for the first time perhaps, prevailed to some extent in the rural districts, remote from towns, among isolated persons who had not visited them. But in almost all of these instances the disease prevailed in aggregations of people, which are virtually towns, as the plantations where the population is concentrated at one centre, often forming a village of from 100 to 500 or more persons."

Again, the mere fact of being born in the city is not in itself protective. "Thousands are thus born of uncreolized parents, who pass through the city, as immigrants, or who reside in the city in the winter only. Their return to the city might, in this way swell

the number of the so called Creoles to hundreds every epidemic." A long continuous residence in the city is almost equivalent in its protective influence to native creolism, and the constitutional modification thus produced is not limited to the immediate subject of it, but is transmissible to the progeny. Creolization in a city, whether native or acquired, will exercise its protective force in any part of the yellow fever zone. On these several points, Dr. DOWLER is very explicit. He says, "Creolization in the city, with or without having had yellow fever, is equal as a protection against yellow fever, to congenital or native creolism. This immunity is usually acquired in less than ten years, often in five, but to this rule very many exceptions occurred in the very extraordinary or exceptional epidemic of 1853."

"City immunity, native or acquired in similar cities, as New Orleans, Charleston, Mobile, Pensacola, Havana, Vera Cruz and other places in the present limited yellow fever zone, is probably identical and mutually protective in all such places, while nativity in cities once in the yellow fever zone in which yellow fever has not been prevalent for many years, as in Baltimore, Philadelphia, New York, Boston, Cadiz, Seville and other places affords no protection."

"City creolism both native and acquired is, to a great degree, as before remarked, hereditary or transmissible from parents to children. At least the exceptions to this law are few and fatal, results almost unknown, as may be proved by the bills of mortality though this is like many other indubitable truths boldly denied, particularly since the decline of the epidemic of 1853—the most mortal, erratic and extraordinary ever seen in New Orleans. It will have been seen what warrant the terrorists have for denying creolization."

"Setting aside the epidemic of 1853 and reasoning from what is fully proved by the past—the best exposition of the present—it will be seen what little foundation there is for the utter rejection of creolism and acclimatization, which in former years was rung and is still ringing in the public ear."

As the questions, whether Creoles enjoy immunity from yellow fever or not? whether Creoles die, and in what proportion? are exceedingly interesting, and susceptible of solution to some extent by statistics, we shall quote somewhat fully from Dr. DOWLER the facts which he has with great care and labor collected, touching these points. He says, "the method which I have adopted is as fair as can be conceived, and will give in this particular a com-

pendious view. I selected the two first weeks of August, the middle of the epidemic, as distributed among the twelve cemeteries, and among the different letters of the alphabet, counting all the persons who died of fevers of what kind soever, as the list does not distinguish the fevers—the one from the other—an arrangement the most unfortunate for the merits of the Creole question, because, in any case it will be admitted that Creoles would be more likely to die of any other fever than yellow fever. It will be provisionally assumed that all the deaths marked "fever" were from yellow fever alone. The whole number of deaths during this period among natives of New Orleans is but 21—of this number one was aged five, and two aged seven days; two aged two, one aged three and one ten months; one aged one, three aged two, one aged four, one aged five and two aged nine years. In one case the word "child," in another "infant," are used to denote the age, and in two cases the ages are omitted. Omitting the two infants and the two of unknown ages, probably infants, the average of the remaining seventeen is twenty-six months, or by omitting the two highest ages, the average age will be less than fifteen months. The list here referred to shows that these twenty-one children are all that died of fevers of every kind among all classes of population during fourteen days in the midst of the epidemic. For the sake of illustrating the argument, the least favorable to creolization, as before intimated, let it be assumed that all these died of yellow fever, though there can be little doubt that the whole number were born of unacclimated parents—parents who had not been creolized either by birth or long continuous residence in the city. Even the two aged nine years each, probably were born of parents only temporarily resident in the city during the cooler season of the year, whose summer residences are in the country; or they may have been born of parents who lived here nine years ago, as immigrants or visitors, and who had returned to New Orleans. But let it be admitted that both of these children were born of parents constantly resident for ten years—admit that these children had not been sent from the city to the country, or to the North among relatives, to school, &c., then let these two Creoles be compared with the whole number of deaths from yellow fever, and what will be the result, supposing that they did die of yellow fever and not

from some other fever? The whole number of deaths during these two weeks, as taken from the official daily report of the Board of Health, is 2,702—from yellow fever alone 2,252—from diseases not named, supposed to be yellow fever 114; total deaths from yellow fever 2,369. According to this supposition, waiving, for the present, the consideration of former epidemics, one Creole in 1,184 died of yellow fever out of a creolized city population four or five times greater than the non-creolized or strangers."

"In order to vary the numerical consideration, I selected the first week in September, counting the number of deaths among persons who had been born in New Orleans. This was the more desirable, because at that advanced stage of the epidemic it might be supposed that it would reach persons long resident to a greater extent than in its exception, and, such indeed was the general opinion. Upon examining the alphabetical list as distributed among the twelve cemeteries, nine individuals proved to have been born in New Orleans; one aged two, one three, one seven, one eight years, two aged six months, one eight months, one eighteen months, and one mentioned as an "infant," giving an average age of thirty-four and a half months. This whole number is subject to all the contingencies in the first series; during these seven days the total mortality was 741, of which 560 were from yellow fever, and 33 under the head of "unknown," making 593, leaving 148 for all other diseases. This enumeration does not conflict with, but gives validity to, the explanation given of the former series."

"The St. Louis cemetery No. 1, which represents the wealthy French of the city and of the country, and those immigrating from France, presents the following mortuary tableau for six months, ending with November 1st; deaths from all fevers among individuals born in New Orleans, 6; one aged twenty months, four, respectively, 3, 10, 20 and 22 years, and one styled "infant." The explanations previously given apply here. That only six should die of fever in six months, had no epidemic prevailed, is remarkable, in a mortality of two hundred and six. Had all these six deaths been from yellow fever, it does not, in all probability, invalidate creolism in the least. Three were infants, one a girl, and two still young, who probably had not remained continuously in the city, and who, on returning, contracted the disease."

"The Protestant cemetery is the best mortuary representative of the wealthy creolized Americans, many of whom, however, could scarcely expect immunity during an epidemic, inasmuch as they leave the city annually, in the summer, and educate their children in the North. The interments from all fevers among the natives of New Orleans in this cemetery, for six months ending

November 1st, amount to eight, in a total of four hundred and thirty; one of these is a "child," one aged twenty-two months, three aged two years, one five, one fourteen, and one eighteen years. The latter two were, probably, as usual, truants, who did not stay at home much, if at all, but, having returned, died. Previous explanation will apply here; but, if they be rejected, the mortality from all fevers is, for this cemetery, a little over one for each month."

"The Cypress Grove Cemetery No. 1, is assimilated in character to that of the Protestant. In the former, the total number of deaths among natives of New Orleans from all fevers in six months ending November 1st, is four—one called a "child," one aged two, and one seven months, and one three years, out of 300 deaths; that is, one native infant died in every two months upon an average."

"The worst view of these facts does not overthrow the doctrine of immunity nor afford much aid to terrorists. The creolized dig but few graves in the swamp cemeteries, and if they were much damaged by yellow fever, these cemeteries would tell it."

It will be seen from these statistics that though the general rule of creole immunity is very satisfactorily established, there were yet some exceptions. This is especially true of the epidemic of 1853 which seems to have set at defiance all past experience on this and other points. Dr. FENNER limits his observations on this topic to the epidemic of 1853; we have already quoted his statement that "one of the most extraordinary features of this epidemic is presented in the fact tnat the natives of the city, *both white and colored*, have suffered severely, and many of them died of it. Children who were born since '47 have suffered most." Dr. DOWLER admits these deaths among children born in New Orleans, but thinks that they may be explained in a way that will not contravene the opinion which he holds as to the immunity of genuine city creolism, native or acquired.

"It will, no doubt, be found upon a full examination of these fatal cases, that nearly all belong to the following classes and conditions; although born in the city, their actual residence has not been continuous, but has vibrated like a pendulum between the country and the town, between Northern schools and cities and New Orleans; or they have been born of unacclimated parents whose continuous residence has been less than ten years, often not that many months; or they have been born of parents one of whom is not acclimated; or, finally, they have been born while the parents resided temporarily in New Orleans, (constituting a

large class,) and hence, called Creoles, who, subsequently having come to the city, fell victims, and hence, appear in the mortuary certificates as natives of the city."

Dr. FENNER in his chapter upon "The General Character of the Disease," expresses the opinion that the epidemic of 1853 was more malignant and unmanageable than any previous one; his own observation as far back as 1841 warrants this opinion, and it is substantiated by the testimony of the oldest practitioners of the city; the published statistics of this and other years are further proof to the same effect. The distinguishing diagnostic symptom, black vomit, occurred in more cases than usual, and the tendency to it was evinced more rapidly than in former epidemics. The symptoms of cerebral disturbance were severe to an unwonted degree, and delirium and convulsions were the precursors of death in many of the fatal cases. Suppression of urine was not noticed so frequently in dangerous cases as in former epidemics.

The tendency to hemorrhage, of which the black vomit is a conspicuous manifestation, was not limited to the stomach, but seemed to pervade the entire system. It often occurred to a dangerous and even fatal extent from the nose, gums, bowels and uterus; a case of death from hemorrhage of the scrotum is referred to. In this connection, Dr. FENNER makes some interesting remarks of a practical kind which deserve to be quoted at length. "Hemorrhage, however, was not always an unfavorable symptom, on the contrary, it often indicated the approach of a *salutary crisis*. Indeed, it is *the natural crisis of this type of fever when its course is not interrupted by art*. How often have I hailed with joy the appearance of a moderate hemorrhage from some *safe part*, as the nose, gums or uterus, in the critical stage of yellow fever, when it had been previously altogether uncertain how the case was going to terminate. At this stage of the disease, a small quantity of blood flowing spontaneously from any part except the *stomach* is most generally followed by the happiest effects, reducing any remaining febrile excitement and allaying nervous inquietude. When hemorrhage sets in, however, there's no telling how far it may go before it stops. Believing as I do that it is a *natural critical discharge in this type of fever*. I would recommend that no efforts be made to check it whilst it is *within the*

bounds of safety, but when it seems to threaten life, we should then resort to astringents, styptics, stimulants and tonics."

"Black vomit is nothing but a hœmorrhage from the stomach, and may exist in any degree, from a few particles of blood mixed, as it were, into a quantity of light glairy fluid, presenting the appearance of floating dark specks or flocculi, to that of a rapid and profuse discharge of *pure red blood*. Before this discharge takes place in any degree there is great engorgement of the mucous membrane lining the stomach. The hemorrhage that then occurs is the effort of nature to relieve this engorgement; consequently, if the patient dies without throwing up much black vomit, we find the mucous membrane greatly engorged, thickened, and red or livid; whereas, if the hemorrhage had been *very profuse*, we find the mucous membrane after death pale and softened. Hence we may explain a fact that has been observed by many, viz: that *recovery is more apt to take place after free discharges of black vomit* than after *very slight*. The reason is obvious: in one instance, nature effectually relieves the distressed organ by directly depleting its morbidly engorged blood-vessels; whilst in the other there is not a sufficient discharge to afford any relief."

"When a patient is threatened with black vomit the great indication is to remove that engorgement of the blood-vessels of the stomach which is its proximate cause."

"Black vomit and other hemorrhages rarely occur amongst full-blooded negroes, though I have heard of a number of cases this year, and had one myself. Mulattoes and Quadroons are almost as liable to them in yellow fever as white people, and quite a a number have died of hemorrhages this year. This difference between the black and mulatto must proceed from the mixture of races."

"Black vomit is quite common amongst white children with yellow fever, but they are far more apt to recover from it than adults. I shall say more of this in another place."

"Black vomit is by no means *restricted to yellow fever*, but is occasionally met with in other diseases, such as dysentery, cancer of the stomach, and the state of pregnancy."

The salutary influence of moderate hemorrhage upon the progress of yellow fever is not peculiar to this form of disease; all observant practitioners must have noticed a like beneficial effect from this cause in other diseases. For example, hemorrhage from the lungs in tuberculization of those organs very frequently retards the process of disorganization, and very much protracts the duration of many cases; in pneumonia, the copious expectoration of rust colored sputa materially mitigates the severity of the inflam-

mation; chronic abdominal affections dependent upon or associated with congestion of the portal vessels are often greatly ameliorated and sometimes entirely subverted by an attack of hæmatemesis or melana; in typhoid fever, moderate hemorrhage from the bowels is not unfrequently the immediate precursor of a very decided improvement in all the symptoms; we have seen a number of cases of this fever in which convalescence promptly succeeded a moderate loss of blood in this way.

Dr. FENNER remarks upon another feature of the epidemic of 1853 which was not at all common in other epidemics, viz: a strong tendency to *relapse*. "After the customary subsidence of the fever, at the end of the third day, there would be a period of calmness lasting from twenty four to forty-eight hours; and then the fever would kindle up again, and last for one day or more. This secondary fever was often very dangerous, though it frequently terminated very happily. The interval of convalescence after the first attack was sometimes so long, as to appear more like a *second attack* than a *relapse*. From two to four weeks have been known to elapse between two distinct attacks of the fever in the same person."

Under the head of "Special Observations," Dr. FENNER directs his attention to several special points, such as *recoveries from black vomit*, and *second attacks* of yellow fever; upon these points there exists a difference of opinion and experience among the profession of New Orleans. Dr. FENNER, while he admits that the chance of recovery is almost desperate, little better indeed than *one in a hundred*, when *well marked black vomit* is developed, yet had the good fortune to observe "quite a respectable number of recoveries" from this perilous condition in 1853. Two of these cases occurred in private practice and several were observed in the wards of the Charity Hospital.

The experience of several of the most respectable practitioners of New Orleans accords with that of Dr. FENNER, and he presents their testimony and the number of their cases. "Dr. CHAPPIN, House Surgeon of the Charity Hospital, gives it as his opinion, that *seven per cent* of the cases of black vomit in that institution recovered."

"Notwithstanding all this testimony to the fact of recovery from

black vomit, one of the most prominent physicians of the city, who has practiced here near twenty years, tells me he never knew a case of *unquestionable black vomit* in yellow fever get well."

A like difference of opinion exists as to the liability of persons to second attacks of yellow fever. Dr. FENNER thinks that second attacks may occur under certain circumstances. He says, "I mean by this, persons who have had the disease in former years. In my history of the epidemic of 1847, I mentioned that several instances of this were observed, and the same has occurred this year. There can be no doubt that if a person have a plain attack of yellow fever during the prevalence of a *severe* epidemic, there will be but small probability of his ever having it again, provided he remains in the same place; yet the rule is by no-means *invariable*, as I shall presently show. If one has it, however, during a *mild* epidemic, or when there are only a few sporadic cases, his subsequent exemption will not be near so great. Thus there were numerous attacks this year among persons who had had other attacks since 1847, but not many among those who had it that year, or any previous *strong* epidemic."

"I saw no case this year which had been attacked in 1847; but several who had the disease well marked in 1848, and subsequently."

"Dr. JONES informs me that he saw one case in a person who had yellow fever in 1847, and one who had it in 1839."

"Dr. KENNEDY says he never attended a case of yellow fever in a person whom he had treated before for that disease. Dr. K's., experience extends over a period of twenty years."

"Dr. LINDSAY tells me he treated this year at least a dozen cases who said they had had yellow fever before—some of them in 1847; but he cannot vouch for the accuracy of their statements. He had one case this year in a well marked attack. His last attack was mild and only lasted two days."

"Dr. MOSES M. DOWLER, who has practiced here seventeen years, says he never saw a second attack of yellow fever in a person whom he had himself attended, but a good many who said they had it the second time, and had been attended by others—he is disposed to believe that such instances have occurred."

"Dr. W. STONE, and Dr. SUNDERLAND also, say they never knew a second attack, and are disposed to doubt the testimony of those patients who told them they had the disease more than once Both of these gentlemen are of opinion that second attacks of yellow fever are as rare as second attacks of small pox or measles. Dr.

Stone even goes so far as to think that *acclimation once attained is never lost by removal from localities where yellow fever prevails.*"

"It is needless to multiply quotations upon this point, as similar contradictory testimony and opinions might be obtained throughout the profession. The thing is at last reduced to a *matter of opinion*, and cannot be definitely settled. Those who have made up their minds that a person can have yellow fever *but once*, will not be convinced to the contrary *by any facts that can be presented and vice versa.*"

Dr. Fenner devotes but a small portion of his history to the consideration of the "Treatment" of yellow fever; his reason for giving so limited a space to this important topic, as well as the results of the further trial of the "abortive treatment" of fever which has been so extravagantly lauded, for a few years past, by Southern practitioners, will appear in the following extract. "As the main object of this paper is to give a sort of historical narrative of the origin, progress, extent and mortality of the great epidemic which has so severely scourged our city, and the account is already drawn to so great a length, I deem it best not to enlarge it by a discussion of the debatable topic of *treatment.* I could not do justice to this subject, without devoting at least ten or fifteen pages to its consideration, and therefore will defer it to a future period. As many of my professional readers, however, may expect me to say something about the "*abortive treatment*" of yellow fever, so highly extolled in some of my previous writings, I must not pass it by in silence."

"In 1847, and ever since, till the present season, I have been able *promptly to cut short* nearly all the cases of yellow fever I was called to treat in this city; and there was but one year, (1851,) in which there was not a good deal of it to be treated. Several other highly intelligent physicians of this city have done the same. Our chief remedies for this purpose were large doses of quinine and opium, given at the outset of the fever. In reporting my satisfactory success with this treatment, I admitted that the disease treated although certainly *yellow fever*, was of rather a milder type, and that it remained to be seen whether the abortive treatment would be equally successful in a more malignant epidemic. The opportunity has been presented this year, and I must now make a candid statement of the results of my experience.

"When the epidemic broke out, I was one of the visiting physicians to the Charity Hospital, and soon had ample opportunities to test the abortive treatment by large doses of quinine and opium.

It did very well in many cases where there was a *fair opportunity to apply it*, but I soon discovered that it did not display that controlling influence over this fever which it had done over all the yellow fever I had met with for six years previously. I then fell upon a more moderate use of the sulphate of quinine, and finally gave preference to the *ferro-cyanuret*, in combination with blue mass and without opium or morphine. I was pleased with the results, and pursued this course to the end of the epidemic."

"I do not recollect to have treated any case of yellow fever without giving quinine in some form, and am willing to compare results with any physician in the city. I still believe it to be *one of the most*, if not *the most valuable* of all our remedies in yellow fever—in short, that it is just as valuable in this type of fever as it is in bilious remittent. Many physicians tell me they found the sulphate of quinine to fulfil their expectations this year as well as usual, whilst others report quite differently."

"When this epidemic broke out, the sulphate of quinine was prescribed boldly, by perhaps a large majority of the physicians of New Orleans; but from *the injudicious use of it*, which fell under my own observation in the wards of the Charity Hospital, I soon foresaw and predicted the *disrepute* into which the remedy would inevitably be brought, if things went on in that way. My prediction was fulfilled. From the *abuse* of the remedy in the hands of many who knew not how to prescribe judiciously, a popular prejudice rose up against it, and in the eyes of many it was brought into unmerited disgrace. But this has happened to almost every valuable remedy in the whole *materia medica*, and must continue to occur, as long as people will rashly venture to administer powerful medicines, who know little or nothing about medical science. Notwithstanding the obloquy which has been heaped upon this great and glorious remedy this year, it still maintains the high reputation it has long held amongst those physicians who have learned to prescribe it with judgment. If people expect to discover a *sovereign remedy for any special disease*—one that may be pitched into the human body without discrimination or judgment, whenever that disease is found, they are woefully mistaken. The *art of prescribing* medicines is of more importance to the community than the *real virtues* of the medicines; for the former is possessed by but few, whilst the drug stores abound in valuable remedies."

"From all I have heard and seen, I am sure that no one can boast this year of the *extraordinary* success of his treatment, whether he used quinine or not, *calomel* or not, large quantities of medicine or *none at all*. Yet I would by no means wish to convey the idea that the success of the experienced physicians of New Orleans has not been highly commendable this year, considering the virulence and malignancy of the epidemic, and the numerous

difficulties in the way of bad nursing, &c., they had to contend with. For myself, I will state conscientiously that I lost less than nine per cent., of my cases in private practice, to which I was called *in good* time, and had a *reasonably fair chance to treat;* and about 16 per cent. of the whole. I doubt not that many physicians met with equal, if not superior success, and under all the circumstances, I do not think it should be considered discreditable. If the same success had been attained by all the physicians of the city, our population would not have been *decimated* as it has been by this dreadful pestilence."

As the History of Dr. FENNER and the Tableau of Dr. DOWLER were written with special reference to the Quarantine Question, our analysis of them, though already somewhat extended, would be incomplete were we to omit altogether what they have to say upon this topic. They are both decidedly opposed to Quarantine measures, as may readily be inferred from the quotations already made. Dr. FENNER says, "I am not prepared to maintain that yellow fever is *never* communicated *per se*, from person to person. On the contrary, I can readily conceive that, like cholera, typhus, and dysentery, it may sometimss display infectious or contagious properties to a limited extent. I have *never seen* an instance of the kind; but cases have been reported to me, upon such *reliable testimony*, that I could see no other way of accounting for them than *direct communication*."

"Admitting it as true, that yellow fever is capable of regenerating itself in the bodies of the sick, and of thus extending from person to person in close proximity, let us pause a moment and examine *the value* of this fact. At all the places where yellow fever prevails in the United States, it appears at *distinct intervals* of different lengths. It breaks out and rages for a season, disappears entirely, and after a lapse of time returns again. When it re-appears, how often can it be traced, with *reasonable probability*, to infected vessels, goods, or persons? If this can be done in a *considerable majority* of instances, it will be sufficient to make a *rule;* and the instances in which such a connection cannot be fairly traced, must be set down as *exceptions* to the rule. Now, I maintain, after careful observation of the outbreaks of yellow fever at New Orleans for the last twelve years, that no such connection could be reasonable traced in any instance. Nor has it been traced in a satisfactory manner in Mobile, Natchez, Vicksburg, or any other place in the United States, where this disease has prevailed. Hence the *great majority* of the physicians, and others who have had the best opportunity of observing, have come to the conclu-

sion, that epidemics of yellow fever do not *usually*, if *ever*, originate from this source. This is also the uniform conclusion, with but *few exceptions*, of all those who have seen most of this disease in all parts of the world where it prevails, as any one can see who will examine the volumes of testimony that have been published on the subject."

"Again, yellow fever may be contracted in an infected district and conveyed in the person of the sufferer to a place quite remote. In such instances, which are very frequent, and doubtless familiar to thousands of persons in this region, *how often* is it communicated to those who come in contact with it? I will venture to say, *not as often as once in fifty cases*. Many would say, not once in a hundred."

"If, then, it be true that yellow fever is not communicated from one person to another by immediate presence or contact, independent of other influences, oftener than *once in fifty or a hundred exposures*, it would certainly make but a *rare exception* to a general rule; and this I believe to be about the true and real value of the now popular and warmly advocated doctrine of the *contagiousness of yellow fever*. It is equally applicable to *fomites* of all kinds."

"I have now admitted, for the sake of argument, all that is contended for by the most strenuous advocates of contagion, and what does it amount to?—that yellow fever may be conveyed from place to place, in ships, goods and persons; and even be communicated to those who come in contact, yet *this effect is so seldom produced* as to make but *a rare exception to the general rule*. Now, does this afford sufficient inducement for the establishment of *Quarantine*, involving heavy expense, and throwing serious impediments in the way of commerce and travel? *That is the question!* and I only wish that the Legislature, who have to decide and act upon it, were as fully informed as they ought to be, as to all that has been done in regard to it within the last fifty years. France and England, two of the most enlightened and rigid governments in the world, after enforcing Quarantine against yellow fever for half a century, are now abandoning it as *useless*. The reports that have been made to them by the able men appointed to investigate the subject, show most plainly that all that can be done, to either *check* or *prevent* the ravages of yellow fever, consists *in proper attention to cleanliness, ventilation and drainage*."

A few extracts from Dr. DOWLER will serve very clearly to show what his opinions are in regard to Quarantine.

"If Quarantine be not a fraud on the many for the benefit of the few, it is at least a superstition devoid of any philosophical evidence in some of its most fundamental details—as for instance, in its mystical adherence to the number *forty*, adopted in the dark

ages (1485) by Councils or Boards of Health, being a monstrous compound of medical, legal and theological fancies, founded on the duration of the forty days flood; Mose's sojourn of forty days on Mount Sinai; Christ's fast of forty days in the wilderness of Judea, and the Lent fast of forty days in the Church ceremonial. Hence the Italian *quaranta*, from the Latin *quarantina*—forty days more or less—during which time persons, animals, goods, letters and ships are interdicted, confined, restrained by *coudous sonitaires*, or lazar housed, to the scandal of a fast age, which chides the tardy movements of the locomotive and steamship, and is barely satisfied with the velocity of lightning, which brands with the word *fogy* every thing devoid of rapid progression."

"Old Britain is more progressive than Young America in quarantine. The voluminous report against quarantine, especially in reference to yellow fever, by the Government Committee of Great Britain, submitted in 1852, foreshadows the opinion of the forthcoming report against quarantine even for the plague. That report will show what measures 'will supercede the necessity of those grievous interruptions to commerce and international intercommunication which quarantine, so universally imposed on account of plague, has hitherto occasioned.'"

"Contagionists have during this, as well as during all former epidemics, collected facts to prove their theory. A pedlar, from an infected district, arrives in a town—his pack is opened—he, the family, and many of the villagers die of yellow fever. Exactly the same occurrences (which are mere coincidences) take place a hundred times where there has been no pedlar—no box of goods opened—no travellers from the infected districts. In one town, a crate of crocks from New Orleans is said to have been the medium of transmitting contagion to the village; but at that very time nearly all the other towns for 500 miles around were falling under the malign influence of the epidemic. It would be most extraordinary if crates, boxes, passengers and pestilence should never happen to get together—not as causes and effects—but as coincidences necessary in the ordinary course of business. If the pestilence got into town before the arrival of a bale of goods, the former did not cause the arrival of the latter. If the man who opens the goods dies of black vomit, together with all of his family, a hundred other families take the disease without any such apparent exposure, and die in like manner. A planter fences up his grounds and secludes himself, family and slaves, and all escape; another does the same thing and all are attacked."

"Those not irrevocably wedded to contagion, might find it useful to study the events which have passed before their eyes within the last seven years."

"The late Mexican war furnishes the most complete refutation of the contagiousness of yellow fever in the absence of quarantine,

so far as negative evidence can go. If the United States Government had tried to devise an experiment, on a vast scale, to ascertain whether yellow fever could be propagated by ships and armies it could not have achieved its purpose more effectually. In 1846, 1847 and 1848, this malady existed in Tampico and Vera Cruz, and was severe in New Orleans in 1847. The troops and the material of the army, leaving New Orleans for Vera Cruz, and Vera Cruz for the interior of Mexico, did not suffer themselves from yellow fever, nor spread contagion through the towns and country. In 1848, thousands of the returning soldiers passed through Vera Cruz in June, where yellow fever existed, and on reaching New Orleans in July and August, a few died out of fifteen thousand who remained in the city and its environs sometime without communicating any disease to the city by means of their goods, army materials, and selves. Thousands thus, without having been quarantined, remained in the city for a time, and quitted it for their homes, in other towns and places, without having communicated the disease to any one. After the reduction of Vera Cruz, yellow fever appeared, and many invalids and sick persons were sent to New Orleans and other places for treatment, in the transports which carried out the troops, yet they did not propagate the disease any where. Thus at least fifty thousand experiments made in Tampico, Vera Cruz and New Orleans, not to name other places, produced no proofs of personal or other kind of contagion, though in both the first named places yellow fever prevailed moderately among residents not acclimated."

"The Board of Health of New Orleans, in an official announcement, shows, that for the month beginning with the 26th of Nov. 1853, that 6,607 passengers from foreign parts, chiefly emigrants, had arrived at our wharves in forty-seven sea-going vessels, by the river route. Now, if we add the number which had previously arrived, to the number which has since arrived from sea, the aggregate will scarcely fall below 10,000, while by other routes, chiefly by the river, the emigrants, absentees and other unacclimated persons, as the steamboat population, coming to the city, in September, October, November and December, forty thousand more may be added, making fifty thousand—fifty thousand living experiments against possible contagion—fifty thousand exposures to all of the possible sources of contagion—the houses, goods, &c., of persons recently dead, including emanations from the sick and dying, during the decline of the epidemic and during the whole of this period—all proving harmless."

"Such vast, yet significant experiments quite overthrow those few cases where the opening of a box or bale of goods is followed by yellow fever,—mere coincidents not causes. There is not the least reason to think that the world, combined for the purpose, could create an epidemic yellow fever or even a single case in any city, street or house, upon the globe."

We might select from the history of Dr. DOWLER many other passages of similar import, but enough has been presented to indicate the strong groundwork of his opinions upon the subject of quarantine. One more quotation from him in regard to the utter futility of some of the means adopted for the purpose of staying the march of the dreadful epidemic will close our notice of his paper.

"The practical method of attacking the *ens epidemicum* or epidemic entity, is no more satisfactory than the theoretical,—as the enfilading the streets with artillery, the combustion of tar, or the smoking of the enemy out of a place. Dr. RUSH and others enumerate such examples. The plague left London, they affirm, as soon as coal was introduced into the city as fuel. Now the part of New Orleans most affected by yellow fever in 1853, was the very part most afflicted by coal smoke, namely, near the St. Mary's market, where the foundries of the city are concentrated, as Leed's, McFee's McCan's, Armstrong's etc. The burning of gunpowder, and artillery firing in the streets and public squares have sometimes been followed by the retreat of the *ens epidemicum*—just as the eating of a salt herring was followed by the recovery of a Frenchman and the death of an Englishman, by fever. The patriotic Board of Health, of which the philanthropic Mayor was chairman, had done all that was possible to stay the march and to mitigate the evils of the epidemic—scraped the streets—lustrated the gutters—provided for the sick—buried the dead, and wisely quarantined the influx of the *uninfected* immigrants,—they had done more; for they gave their personal attention to the sick and dying; in the midst of the crisis, the public mind swaying to and fro like the storm-stricken forest, they yielded to the prevailing opinion. At sun-set the epidemic was regularly, for a time, attacked with great guns. But gun-powder failed. It did worse. Sleep to the sick is the turning point of life—the first glimmer along the dark horizon of the yet dubious morning—sleep was broken—the intellect vibrating between reason and delirium, shattered by the clangor of arms and fever, raved with redoubled violence, and was sometimes quenched at once by a horrid convulsion amid the roar of cannon."

"Among the numerous plans advocated by many, was that of tar-burning. This, too, was tried. But the epidemic raged the more. Terror was supreme."

L. R.

ART. V.—*Address introductory to the Course of Lectures in the Chemical Department of the Vermont Medical College, delivered before the Class of Session* 1854. By. THOMAS ANTISELL, M. D., Professor of Chemistry to the College, and to the Berkshire Medical Institution. Published by the Class of the College. Woodstock; Press of the Vermont Temperance Standard; 1854.

The subject of this lecture is "*Metamorphosis and Metempsychosis*," and the author presents in a striking and beautiful light some of the curious and wonderful phenomena of chemical action. It is an address of rare excellence, abounding in facts, and impressed by the true spirit of philosophy and poetry. We cite a few passages in proof. The author takes, as an example of chemical action, or metamorphosis, a mineral spring, issuing from the crevices of the inner and heated part of the earth, and pursues the mutations of one of its constituents.

"These bubbles of fixed air, or carbonic acid, are made up of charcoal and the vivifying part of our atmosphere, oxygen. This gas, coy, aerial in its form, yet has earthly longings, and loves to creep close to the bosom of the earth, and twines within the deepest folds and wrinkles which Time has made upon her surface; bathes itself in the placid stream, and with it floats along, until it is carried to the sea, where it descends from its exalted position, and seats itself upon the billows of heaving ocean, and mingling in the foam and the waves, it pierces several fathoms deep, to the ocean bottom. There, on the dark slopes of a subaqueous hill, lie in wait myriads of beings, little sacs of membrane, invisible to the unaided eye; they twist their tiny arms about, and catch a bubble, with its coating of water, and greedily devour it; the water they return, the bubble is retained; presently a little limestone coat or shell is formed by the animal, and half the amount in weight is caused by this imprisonment and solidification of the gas. These little animalcules work and build together, and by numbers illimitable and succession continuous, they raise their limestone to the water level,—and behold, the coral reef. Trace it emerge steadily above the water, and the yam and the bread-fruit, the cocoa-nut and the screw-pine clothe its flat and whitened beaches with food and shelter for the wayfaring navigator or current-drifted Polyne-

sian. Here is the restless activity of the atom. Vomited forth from the earth, it emerges into air—sinks down into the water—passes into the body of an animal, and becomes an integrant part thereof; and when the latter dies, it remains behind to form the basis of a durable rock. It is the real proteus; with its change of place it has changed its form;—in the air a gas, in the water a liquid, in the animal and the reef it is imprisoned as a solid. Nor is this a new office to it. Ever since that period in our planet's history, when the waters were gathered together into one place, has this carbonic acid fulfilled the same office, and built up, in the slimy depths of the ocean, these numerous mountain masses of limestone, which, by the movements of time and elevation, become the dry rock of the valleys around us. The labors of man fall into insignificance when compared with that of a minute animalcule, and less enduring monuments of his existence remain, than that of one of the smallest of God's creation.

"But some one will now say, your atom is now at rest. It is a solid rock, and has been so for ages. But are rocks eternal? Why does Nature's bosom throb and heave within continually, and seem almost ready to burst, until, as it were, no longer able to confine herself within the tight girdle that encircles her, she bursts the zone and raises up the land around us. What for? Because the limestone will not stay among us. It, too, has its office;—it yields itself to the rains of heaven, to the rivers of earth, and to the demands of growing vegetables, and the plant and tree draw it in for nutriment, and destroy its composition. The river yields it to the animals in drink, and the remainder is carried down and deposited as a fine chalk mud at the embouchure of the stream,—again, in the cycle of change, to be raised to dry land, and again to be removed. Where, then, is the period of rest? Shall we call the quiescence of even a series of ages in the life of an indestructible and an immortal, a permanent condition? It is rather delay than rest. We must not measure the periods of creation upon the Procrustes bed of our short lives; nor dare to imagine the duration of even the life of our species as more than a dot of sand in the hour-glass of eternity."

Again:—

"While nature thus performs her round of change in the great deeps, let me direct your attention to what is going on in the air. See yonder forest trees, with leaves glittering in the sunbeams, like the well polished armor of the serried ranks of infantry, busy drinking in illimitable volumes of this same fixed air, carrying it into its branches and meeting with the water sucked up by the roots, forming, by the union of this gas and water, the woody tissue, starch, and sugar. To accomplish it, the gas is decomposed, broken up into charcoal and oxygen; the oxygen is given off, the

charcoal retained, to unite with the water to form from these substances in different proportions the solid wood, the gummy ferina, and the saccharine sap. Wonderful fecundity of nature? which can fashion from the same elements three different substances, and has power in addition to transmute them, one into another, with the least possible expenditure of force, as often as occasion demands the change.*

The following are among the closing thoughts of the address:—

"This ever-acting mutation of the atom is due in part to our air, which, containing so much oxygen loosely mingled in, readily yields that element to the first petitioner which presents itself, and it, like a Circassian beauty in the market, seems waiting for the offer, and anxious for the union. The brightest plate of metal is soon tarnished by it, and where it cannot corrode, it will film. It is the trouble of the daguerreotypist to keep his plate clean; he washes, he rubs, he dissolves, and he coats anew the surface occasionally, to keep a pure metallic surface; and when gotten, he has to shut it up from the light, for strange to tell, every ray of light lays its image there, unseen by our coarser gaze, but then needing only the more sensitive surface to make it plain to us.

"The slightest article which we leave out of our hands leaves its image where it rests. A copper coin upon a silver one—a silver coin upon a mirror, leave images which even our breath can make evident to our eye; and it is possible for us to take upon a warm copper ptate an image or copy of a newspaper.

"Nature does not merely condescend to paint the portrait or the landscape upon the coated plate in the atelier of the artist. She is no niggard in her pencil. Every where and at all times where there are rays of light wandering,—where there is a movement to be chronicled,—where there is, to speak technically, a ground to receive the painting, there the image is drawn, painted in an invisible ink. Wherever in crowds we gather within a building, wherever individuals may transact private business together, there is the angel of light tracing on the walls the images of the acts going on, whether they be good, or whether they be evil;—images invisible, ineffaceable; and, like as the manuscript of the middle ages, contain many works copied in one over the other,—those underneath not effaced, but only covered over, so as suitably to receive the more modern thoughts; so like leaves in a book, on these walls are there depicted the successive acts of individuals.

"With this power of the sun to record passing events, may we not understand, in a holier sense, the office of this luminary, who was set for us, "to rule the day;" and how awfully does the suggestion flit through our minds, that against every one of us there

* Dumas Org. Bal.

is a *handwriting of God recorded upon the wall*, which it needs little more than the learning of Egypt to expound and explore."

We thank PROF. ANTISELL for the pleasure we have enjoyed in the perusal of his tasteful and elegant address. Such lectures are worthy of all praise, and the young men to whom Dr. ANTISELL addressed this have shown that they are capable of appreciating true literary excellence in causing it to be published.

Editorial Department.

AMERICAN MEDICAL ASSOCIATION.

THE AMERICAN MEDICAL ASSOCIATION met at St. Louis on the first Tuesday in this month, and after transacting the usual business, adjourned to meet, next year, in Philadelphia. We have not yet seen a full account of the proceedings, but learn from members who were present, that the most exciting question at the late meeting was the motion to transfer, from Philadelphia to New York, the printing of the Association's Transactions. The motion prevailed, but it was at the same time resolved that after the present year the transactions shall be printed at the place of meeting, and consequently they will be printed in Philadelphia in 1855. Dr. C. A. POPE, of St. Louis, was elected President of the Association. The entertainment provided for the Association by the Physicians of St. Louis is described as having been sumptuous in the extreme, and the private hospitality to the members equal to anything yet exhibited in any city where the Association has met. We hope in our next number to be able to give all the particulars of this interesting meeting.

CHOLERA.

According to the last accounts from Paris cholera was on the increase in that city, the cases being more fatal as well as more numerous.

In New Albany a number of cases of cholera appeared towards the latter end of April, but for several weeks past we have heard nothing of the disease. A physician of that city informed us that it first broke out in the same houses in which it first made its appearance, in 1849, and just about the same season; and it is worthy of note that these houses are built in the immediate neighborhood of a filthy pond, one or two of them directly over it. The cases are said to have been twelve or thirteen, and we were told by our informant that all but one or two terminated fatally. Some of the friends of the families afflicted, who remained with the sick as nurses during the night, are reported to have suffered with the disease subsequently, but it did not spread or become epidemic.

INSANE ASYLUMS.

Insanity and the provision for the unhappy beings who are afflicted with disease of the mind, are subjects which have derived fresh interest from events just transpiring in Congress. A bill, it is known, recently passed both Houses of our National Legislature ceding to the States a large amount of the public lands, for the benefit of the indigent insane, and it is also now known that the President has vetoed that bill. It is a matter of the most sincere regret, we would say, of the deepest grief, that the President has felt constrained to defeat so beneficent a measure. Most of the States, it is true, have erected Asylums for the Insane, but in none is the provision equal to the wants of the population. Amply as some have prepared for such sufferers, there is not a State in the Union which has all the accommodations necessary for its insane, and in most of the States the provision is lamentably inadequate. There are still many lunatics confined in the common jails because there is not room for them in the Lunatic Asy-

lums. In view of these facts the regret, we think, must be general, that the humane law passed by Congress was not permitted to go into operation.

Lunatic Asylums having in view the restoration of the insane are institutions of a modern date. As early as 1553 there was one in England, where the crazy were kept, not with a thought of their cure, but for the security of the public. PINEL first conceived the benevolent idea of restoring them to reason, and since his day they have been treated as the subjects of bodily disease, and with what success is well known to every one. Nothing in the history of modern medicine is more honorable to it than the signal improvement in the management of mental alienation. Multitudes of insane men are every year restored to the use of their faculties, to their families, and to the world. It is done through the agency of these institutions, for no fact is now considered better established than that it is necessary to remove deranged persons from their families, and bring them under the restraints and the curative influences of a Lunatic Asylum.

We subjoin an extract from the *New York Times* which contains some excellent thoughts on this subject forcibly expressed:—

"The insane behave better when together,—when kept under established rules to which they readily submit, since they are not arbitrarily imposed upon single individuals,—where they may be occupied in work or sports as is deemed best,—where schools, reunions, music may employ some hours, and seclusion afford perfect quiet at appointed intervals. In PINEL's day it was estimated that of every hundred of the insane, from twenty to thirty were violent; now, not over five or six are so in a hundred. Before Asylums were common, the insane were shut up in private chambers from the beginning to the end of the year, immured in poorhouses, or chained in prisons. Their shrieks, sounding through the quiet of a rural village, chilled the blood of cheerful youth, and frightened into gloomy melancholy all that heard them. Infectious cells, dungeons unfit for the condemned, were their dreary life-graves, till exhausted nature left them tamer and fitter for the company of drivelling idiots, in disgusting almshouses. Now, provision is made for their care—and if the malady is not of too long-standing, for their cure. Yet, no State in the Union provides enough for all her insane, nor does any one provide, perfectly, for those it has in charge. To deal with them as they should be dealt with, is an exceedingly delicate matter. Attendants must be firm and unyielding, yet gentle and winning. Medical assistants must

be shrewd—gifted in reading human nature—the choice ones of their profession. Asylums should avoid all that seems prison-like in architecture or furnishing. Rooms for restraint should be strong, without seeming so; the bolts should be out of sight, and the locks sure, without pretension. The parlors should be hung with pictures suggestive of quiet and domesticity. Apartments to confine the noisy, while not far removed from the centre, yet should be constructed with thick walls, to deaden the sound that none need be shocked by their noise, nor the sleepers disturbed. None but those who know the insane, their wants, their dangers, their difficulties, should be intrusted with the plans for building asylums. In these respects, much yet remains to be done. The failure of the favorite project of Miss Dix must not lessen the hopes of philanthropists, or slacken their efforts. May a different effect be the issue, and greater interest than ever be felt in all that concerns the welfare of those in whom reason is overthrown.

HOMŒOPATHY.

Prof. Henderson, of the University of Edinburgh, is out in reply to his colleague, Prof. Simpson, whose work on Homœopathy we noticed a short time since. The reply is entitled "*Homœopathy fairly represented*," and has been republished by Messrs. Lindsay & Blakiston in a very handsome style. While we admit that the Professor of General Pathology in the University of Edinburgh is quite as able to do justice to Homœopathy as the ablest of its advocates, we must be permitted to say that his "reply" is very little to our taste; and we say this, not, we think, from prejudice against the subject, but because the temper in which it is written is bad, the argument feeble and unfair, and the style verbose and tedious. As to discovering anything new in support of this strange delusion, that was hardly to have been expected even from the learned Edinburgh professor, and we are therefore not disappointed in finding that the main fact insisted upon in his book as favoring homœopathy, is the fact so often urged—the frequent recovery of patients under this system of treatment. This is granted, as we know just as well that patients often recover from disease without any treatment at all; but that Dr. Henderson should contend gravely and laboriously for the efficacy of medicine in infinitesimal doses, we confess surprises us.

And yet we do not know that there is cause for being surprised at *any* vagary of the human mind. Dr. HENDERSON is a physician of learning and note, highly educated and of mature years; but physicians before him, with all his accomplishments and advantages, have been believers in clairvoyance and metallic tractors. It is sad to see such a man so led astray, but we see men, in our times, full of learning and years, becoming dupes to the monstrous absurdities of spiritualism. We may deplore the spectacles, but such things seem to be inseparable from human nature.

Dr. HENDERSON has the usual platitudes about the repugnance of the mind to new truths, the opposition to great discoveries, &c., which are in the mouths of neurologists, mesmerists, and all that class of pretenders. Every humbug offered to the acceptance of men is placed, by its fond author, in the same category with the Copernican system, and HARVEY's discovery of the circulation of the blood. It must expect its obloquy and buffetings. Truly the opposition to homœopathy continues a great while, and is far from being on the decline for all that we can see.

We must let Dr. HENDERSON speak for himself in one paragraph. It contains an apology for HAHNEMANN—a precious admission that he was not perfect and did not understand everything, and affords a fair specimen of the style and spirit of his work.

"We cease to wonder, then, that even HAHNEMANN, with all his genius and learning, and keen-eyed scientific instinct, *overlooked a few things* in medical science, which he might have studied with advantage to his reputation, and the credit of his system. In the brightness of his own discoveries, these inferior objects "hide their diminished heads," and the eye that dwelt so long and so intently on the light that appeared amidst the general gloom, from its first faint glimmering in its path, as he meditated mournfully on the surrounding chaos where "darkness brooked," on through its gradual kindling into the dawn of a better day to the patient humanity, may well be pardoned its insensibility to the ineffectual glowworm lights that could do little else in his day than make the darkness visible. This plea is specially applicable to his contempt for morbid anatomy, and to his ignoring of ordinary palliations that are capable of producing temporary ease in incurable organic diseases. With him the office of the physician was to *cure;* on that grand consummation his heart was set, and he had no eyes for any end short of the test that could be wished for. Morbid anatomy presupposes death; and whatever light the scalpel shed on disease, to HAHNEMANN it showed only the discomfiture, the

imperfection, sometimes even the deadly error of the art that should have healed. He sought only for the means of *curing* diseases, and believed that means existed which, known and rightly used, were equal, by the goodness of the Almighty, ('compared to which,' he says, 'the tenderest mother's love is as thick clouds beside the glory of the noon-day sun,') to the cure of almost all maladies: so that morbid anatomy was in his opinion merely the proof, if not the result of error."

One extract must suffice, and with it we dismiss the book. It will no doubt be a great comfort to the fraternity of homœopathists, but our impression is that few physicians who have other employment will have the patience to wade through its wearisome pages. We venture the prediction that it will not make one convert to Homœopathy.

SMALL-POX.

There have been two or three fatal cases of small-pox, in this city, within the last few weeks, and the disease is still prevailing to some extent in one or two neighborhoods. Small-pox was prevalent during the last year in several of the eastern cities, and from New York we have a pamphlet by Dr. Joseph C. Hutchinson on the causes of its prevalence there, in which we find the remark, that an inspection of statistical tables "reveals the significant fact that in those countries where vaccination is made compulsory, the proportionate mortality from small-pox is considerably less than half what it is where it is entirely voluntary."

This is a significant fact. If vaccination were universal, we have no doubt that small-pox would be extirpated. In Denmark it had at one time disappeared before the defensive influence of compelled vaccination; but chance and a careless security, says Dr. Watson, have led to its re-introduction there.

There is a disposition in the public mind to question the efficacy of vaccination, which the recurrence of the pest, and especially in vaccinated persons, is calculated to increase. But it should be borne in mind that the operation is often very carelessly and imperfectly performed, from which it must result that the system is not brought under the vaccine influence; and it is further to be

remembered that individuals are liable to second attacks of small-pox, and may therefore occasionally suffer with varioloid after having been well vaccinated. But there is no ground for skepticism as to the prophylactic powers of the vaccine virus; on the contrary we are sure that every one who patiently investigates the subject will be ready to adopt the language of Dr. HUTCHINSON, who declares in closing his laborious inquiry, that his "estimate of the immense value of vaccination is not only undiminished, but is positively increased, and that he feels more inclined to defend from the assaults of ignorance and prejudice the most brilliant triumph of modern medicine."

MEDICAL ASSOCIATION OF TEXAS.

We have before us a pamphlet containing the "Constitution and By-laws of the Medical Association of Texas," which was instituted in January 1853, and incorporated by the last Legislature of the State. The pamphlet also contains the proceedings of the last annual meeting, together with the anniversary address of the President, Dr. GEO. CUPPLES. Texas possesses the elements of a great State, and the proceedings of its Medical Society show that it is the determination of its physicians to advance the medical profession with the growth and development of the State. These proceedings would be creditable to the profession of any of the older members of the confederacy. The address of the President is forcible and eloquent.

Record of Medical Science.

LEGAL DECISION, MALPRACTICE.—We copy the following important decision in a case of alleged *malpractice*, from the *Medical Reporter:*

The following opinions, delivered by Judges Woodward, Black, and Lewis, in reference to the subject of skill in a Physician or Surgeon, in attending a patient, to free him from the charge of malpractice, should he fail to effect a cure, will be read with interest. They are of more than ordinary importance, and it will be seen, overturns the law of the Court below.

Dr. Alexander G. McCandless *vs.* James McWha.—Error to Common Pleas of Beaver county.—Woodward, J.—This was an action on the case by the defendant in error, a respectable physician and surgeon, for malpractice in setting a broken leg of the plaintiff, and the only question of any importance, presented for our consideration, is whether the Court erred in charging "that the defendant was bound to bring to his aid the skill necessary for a surgeon, to set the leg so as to make it straight, and of equal length of the other when healed; and if he did not, he was accountable for damages, just as a stone mason of brick layer would be, in building a wall of poor materials and the wall fell down; or if they built a chimney, and it should smoke by reason of a want of skill in its construction."

It is impossible to sustain this proposition. It is not true in the abstract, and if it were, it was inapplicable to the circumstances of the case under investigation. The implied contract of a physician or surgeon is not to cure—to restore a fractured limb to its natural perfectness—but to treat the case with diligence and skill. The fracture may be so complicated that no skill vouchsafed to man, can restore original straightness and length, or the patient may, by wilful disregard of the surgeon's directions, impair the effect of the best conceived measures. He deals not with insensate matter, like the stone mason or brick layer, who can choose their materials and adjust them according to mathematical lines,

but he has a suffering human being to treat, a nervous system to tranquilize, and a *will* to regulate and control. The evidence before us marks this strong distinction between surgery and masonry, and shows how the Judge's inapt illustration was calculated to lead away the jury from the true point of the cause.

Dr. Duncan describes the fracture as an oblique comminuted one, of the *tibia* and *fibula* of the leg, about half way between the ancle and the knee, and he says that on one occasion, when he was present at a dressing of the limb, he heard Dr. McCandless complain that McWha had loosened the bandages, and he told him that if he loosened them, his leg might be shortened, but McWha justified his act because his leg was painful. Now upon such a state of facts, the question was, not whether the Doctor had brought to the case skill enough to make the leg as straight and long as the other, but whether he had employed such reasonable skill and diligence as are ordinarily exercised in his profession. For less than this he is responsible in damages, but if he be held to the measure laid down by the Court below, the implied contract amounts, on his part, to a *warranty of cure*, for which there is no authority in law. In a fracture like this, a shortening of the limb is sometimes an inevitable consequence. Dr. Dorsey, in his Elements of Surgery, speaking of broken legs below the knee, says:—"The fracture of both bones is most frequent—it may be transverse or oblique, simple or compound, comminuted or single. The fragments are occasionally displaced in every direction. In transverse fractures there is generally no shortening of the limb, but in those which are oblique, the leg is generally shortened." And from Ferguson's System of Practical Surgery, cited in the argument, we learn that the fracture in the tibia may be oblique, and the fragments, two or more, may have a constant tendency to become displaced—there may be great irritability of the muscles, particularly during the early part of the treatment—great restlessness of the patient, or unwillingness to submit to the requisite confinement; in short, a vast variety of circumstances likely to cause difficulty in the treatment. Not to multiply authorities, these are sufficient to show that the rule prescribed by the Court is too rigid for this class of cases—that shortening of the leg may result from the most careful and approved practice, or from the misconduct of the patient. Nothing can be more clear than that it is the duty of the patient to co-operate with his professional advisers, and to conform to the necessary prescriptions; but if he will not, or under the pressure of pain cannot, his neglect is his own wrong or misfortune, for which he has no right to hold his surgeon responsible. No man may take advantage of his own wrong, or charge his misfortunes to the account of another.

We do not mean to intimate an opinion that this case was properly treated, or that the leg could not have been restored to the

length of its fellow; but in view of the diversified circumstances that attend cases of this sort, it was very important that the true rule of professional responsibility should have been given to the jury, with instructions that they should inquire, from all the facts in proof, whether the defendant had come up to it, or stopped short of it.

We have stated the rule to be reasonable skill and diligence, by which we mean such as thoroughly educated surgeons ordinarily employ. If more than this is expected, it must be expressly stipulated for, but this much every patient has a right to demand in virtue of the implied contract which results from entrusting his case to a person holding himself out to the world as qualified to practice this important profession. If a patient applies to a man of *different occupation* or employment, for his assistance who either does not exert his skill, or administers improper remedies to the best of his ability, such person is not liable in damages; but if he applies to a *Surgeon*, and he treats him improperly, he is liable to an action, even though he undertook gratis to attend the patient, because his situation implies skill in surgery. Per. Heath J., in Shiels v. Blackburn, 1 Hen. Blac; 161 Seare v. Prentice, 8 East., 348.

The principle is contained in the pithy saying of Fitzherbert, that it is the duty of every artificer to exercise his art rightly and truly, as he ought. This is peculiarly the duty of professional practitioners, to whom the highest interests of man are often necessarily entrusted. The law has no allowance for quackery. It demands *qualification* in the profession practiced—not extraordinary skill, such as belongs only to a few men of rare genius and endowments, but that degree which ordinarily characterizes the profession. And in judging of this degree of skill, in a given case, regard is to be had to the advanced state of the profession at the time. Discoveries in the natural sciences for the last half century, have exerted a sensible influence on all of the learned professions, but especially on that of medicine, whose circle of truths has been relatively much enlarged. And, beside, there has been a positive progress in that profession, resulting from the studies, the experiments, and the diversified practices of its professors. The patient is entitled to the benefit of these increased lights. The physician or surgeon who assumes to exercise the healing art, is bound to be up to the improvements of the day. The standard of ordinary skill is on the advance, and he who would not be found wanting, must apply himself with all diligence to the most accredited sources of knowledge.

If, in view of the principles here stated, Dr. McCandless shall be found, on re-trial, to have performed his whole duty to his patient, and that any defects in the limb are due to the patient's fault, or to the peculiarities of the fracture there ought to be no

recovery in damages. But if the blemish be fairly attributable to professional negligence, the jury should assess the damages.

The only remaining error assigned is scarcely worthy of notice. The action depended so entirely on its own circumstances that the observation of the Court as to the policy of such suits was irrelevant, and we may fairly presume harmless. But for misdirection on the other point the judgment is reversed, and a *venire de novo awarded.*

McCandless *vs.* McWha.—Black.—We all concur in the law of this case. The Judge, in his charge, fell into an error in stating the amount of skill required in the treatment of this case. We reverse for that reason. But when we decide the legal point we are done with it. We are not authority on questions of surgery. Our hands are abundantly full of questions which belong to our own profession, without volunteering opinions on sciences which relate to others. I think it necessary to say this in order to prevent the Court below, on second trial, from supposing that we intend to give them any instructions on matters in which we have no jurisdiction.

McCandless *vs.* McWha.—Lewis J.—Without dissenting from the able opinion of Mr. Justice Woodward, I make the following additional remarks: The case is peculiar, and relates to matters of such general interest as to justify this course. The Court below charged the jury that "the defendant was bound to bring to his aid the skill necessary for a surgeon to set the leg so as to make it straight and of equal length with the other when healed; and if he did not he was accountable in damages, just as a stone mason or bricklayer would be in building a wall of poor materials and the wall fell down; or if they built a chimney, and it would smoke by reason of a want of skill in its construction." This is the error complained of, and it seems to be thought that the Court, in giving this instruction, held the surgeon bound, under all circumstances, to cure the fractured leg so as to "make it straight and of equal length with the other when healed." I do not so understand the language of the Judge. He only held the surgeon bound to "*bring to his aid*" the skill necessary for the purpose. If the fracture in question was one which might have been restored by the exercise of ordinary skill, there was no error in requiring its exercise from one who held himself out as possessing it, and received compensation for his services in consequence of his represented professional ability. This brings us to the question: Was the injury one which might have been cured by the exercise of ordinary surgical skill? To decide this question we must have a description of the fracture. The evidence given has not been brought up by the bill of exceptions, and the defendant in error objects to that part of it which has been inserted in the paper-book without being certified as correct. The only testimony presented

for consideration here, by the plaintiff in error, is the deposition of Dr. Duncan, who was his student at the time of the injury, and visited the patient in company with his preceptor after the first visit of the latter. This witness describes the injury to be "an oblique comminuted fracture of the *tibia* and *fibula*, nearly half way from the ancle to the knee, or thereabouts;" and informs us, in speaking of the treatment of it by Dr. McCandless, that "there were splints on the fore and back parts of the leg, reaching from the ankle to the knee, to keep up extension and counter-extension." Dr. McCandless, on this visit, complained that the patient had "disturbed the bandages and dressing *by loosening them;*" and the patient "defended the act *of loosening the bandages*, because the leg was painful." The witness further states that the leg, at this time, was "considerably swollen."

We have no precise account of the manner in which the splints were secured, so as to "keep up the extension and counter-extension," for which the witness tells us they were designed. I am unable to comprehend how splints "reaching only from the knee to the ankle," could be applied to such a purpose without manifest danger of injury by means of the attachments which would be necessary to produce the result. *Extension*, as used among surgeons, is the force exerted on the lower fragment, in order to bring its superior extremity lower than the inferior extremity of the superior fractured portion; and *counter-extension* is a resisting force which prevents the whole limb, or even the body, from obeying the force of extension. The attachment, by means of a circular bandage at the ankle, for the purpose of extension, and that at the knee, for the purpose of counter-extension, would tend to impede the circulation, particularly the venous return, (which ought not to be obstructed,) and would irritate the parts so as to produce great pain and probable injury. Professor Boyer, in his Lectures on Diseases of the Bones, recommends that the splints should be long enough to extend from the knee to *a short distance beyond the sole of the foot*, and that they should rest perpendicularly on their edges, and a third splint on the anterior portion of the leg. Professor Miller, in his Principles of Surgery, states that the splints should "*invariably* be of sufficient length to *command the neighboring joints*, otherwise, by rotation, re-displacement will certainly take place." Dr. Hutchinson recommends splints extending from the knee *six or eight inches below the sole of the foot*, so as to dispense with irritating attachments at the ankle. But Professor Dorsey, whose skill and experience entitles his opinion to great respect, in his work on Surgery, informs us that even Hutchinson's convenient method is found to produce great irritation, and to cause the leg to swell from the pressure of the circular bandages; and that when this happens, in oblique fractures of the leg, (such as the case in question,) *the long splint of*

Desault must be substituted, and the *counter-extension made at the pelvis*, in the same manner as in the case of a fractured thigh except that the leg must be dressed with the bandage of strips." In fractures of the thigh, permanent extension is usually effected by means of a long splint, acted on by a band attached to its upper extremity, and passed over the perineum, by the tightening of which the splint and the limb are pushed steadily downwards. By the addition of a shorter splint, but long enough nevertheless to extend from the perineum to six or eight inches beyond the sole of the foot, united at the lower extremity to the long splint by means of a cross piece, the extending force could be applied to the ankle by attachments to the cross-piece, in such a manner as to avoid irritation or other injury. But according to the opinion of eminent surgeons, "a short splint, extending a little above and below the fracture only, is not only an absurdity but a mischievous absurdity."—Miller's Prin. Surgery, 507.

Entertaining these views of the case, I am bound to say that the plaintiff in error has failed to satisfy me, either upon philosophical principles, or by surgical authority, that the means made use of, for the purpose of producing "extension and counter-extension," were adequate or even proper for the purpose. If this was a case in which such extension by artificial means was not required, the mere want of adaptation of the means to that end would be immaterial. But we must remember that the fracture was oblique, not transverse—that it was comminuted—that is, the bones were broken not only at one point, but many—and that both the *tibia* and *fibula* were thus fractured. Under these circumstances, in preventing the shortening of the limb by the contraction of the muscles, no reliance could be placed upon the bones thus broken into fragments. The necessity of supplying the place of these natural splints, by artificial means, must therefore have been manifest to a surgeon of ordinary skill in his profession. But in addition to the application of means not sufficient to produce the result which was indispensable to a proper restoration of the leg, there is reason to believe, judging solely from the imperfect view of the evidence presented by the plaintiff in error himself, that the short splints were applied by attachments above and below the fracture, so as to impede the circulation, to irritate the parts, to cause the limb to be "considerably swollen," and to produce so much pain that the patient, notwithstanding the strong motive which he had to submit to any treatment likely to effect a perfect recovery, "loosened the bandages because the leg was painful." If this was the case, whatever may be thought of the propriety of the original application of these means of extension, their continuance and the neglect to adopt others less liable to objection, was *prima facia* evidence of a want of surgical skill, and if not explained to the satisfaction of the jury, the defendant below ought to answer in damages for the injury.

A patient is bound to submit to such treatment as his surgeon prescribes, provided the treatment be such as a surgeon of ordinary skill would adopt or sanction. But if it be painful, injurious and unskillful, he is not bound to peril his health, and perhaps his life, by submission to it. It follows, that before the surgeon can shift the responsibility from himself to the patient, on the ground that the latter did not submit to the course recommended, it must be shown that the prescriptions were proper, and adapted to the end in view. It is incumbent on the surgeon to satisfy the jury on this point, and, in doing so, he has the right to call to his aid the science and experience of his professional brethren. It will not do to cover his own want of skill by raising a mist out of the refractory disposition of the patient.

The intemperate habits of the patient are also relied upon here. But this furnishes no excuse for the want of skill in the surgeon. On the contrary, it was a circumstance calculated to admonish him that the case called for more skill and care than cases of less difficulty demand. We are, therefore, brought back to the main questions in the cause.

1. Did the surgeon exercise ordinary skill and care in his treatment of the patient? If he did, he is not liable. If he did not, he is.

2. Was the injury one, which, under all the circumstances, might have been perfectly cured by ordinary surgical skill and care? If it was, and the surgeon failed in his duty in this respect, the damages ought, at least, to be commensurate with the injury. If the injured leg was not susceptible of a more perfect restoration, the surgeon would nevertheless be liable for any unnecessary pain or delay occasioned by the application of unskillful and improper remedies.

Although the error assigned may not be fully sustained, we have nevertheless a right, in our discretion, to reverse for an error not assigned, if it is believed to involve an important principle, or to affect the justice of the case.

In the charge the Court told the jury in substance, that the surgeon was bound to bring to his aid the skill necessary to effect a perfect restoration of the leg. The propriety of this instruction depended upon the question whether the injury was one which under all circumstances, a surgeon of ordinary skill might have perfectly cured. This was a question of *fact*, which should have been submitted to the jury. Plain as the question may seem, it is not a matter of *law*, the decision of which can be taken from them and assumed by the Court. There was, therefore, error in giving the peremptory and unqualified direction which withdrew this part of the case from the jury. But there are errors of omission as well as those of commission. When the Judge spoke of the obligations of the surgeon to bring to his aid the necessary

skill, he ought to have enforced the co-relative duties of the patient to submit to all the skillful and proper requirements of his professional attendant. When the jury were told, in effect, that the defendant was liable if he failed to exercise the skill necessary to a perfect restoration of the leg, they ought also to have been informed that if he exercised ordinary skill and care, he is not responsible for the disastrous result which ensued. Where a case turns upon a question of fact, the jury should be advised of the conclusions of law which apply to each aspect of it. The object of investigations is to enable the jury to form an enlightened judgment on the whole case. The errors of commission and omission referred to, tended to give the jury a one-sided view of the controversy, and when considered in connexion with the facts that a *professional man* was on trial before a jury of laymen, and that the Court, instead of guarding him, as in duty bound, against the prejudices likely to arise in such cases, actually indulged in a strain of remark calculated to inflame them, it is our duty to correct all the errors within our reach. The remarks complained of in the second assignment of error, affirm no principle of *law*, and are therefore not the subject of review here further, than as they suggest the propriety of exercising a prudent discretion in regard to matters which are subject to review.

It is important to the interests of society, that the profession entrusted with the preservation of the health and lives of the community should be held to a strict rule of accountability. Men of true science will not object to this. They court investigation. But the incompetent practitioner and the designing empiric, "love darkness rather than light," and the sooner they are driven by judicial scrutiny, into other pursuits for which they are better qualified, and where they can do less mischief, the better for the public welfare. But it is equally important that professional services should be fairly treated, and that true skill and worth should receive the firm protection of the law. All men have a right to the instructions which make in their favor. But the exigency of the surgeon's case rendered them indispensable on the present occasion. The difficulties which seem to stand in his way are sufficient, without aggravating them by withholding the proper instructions in his favor.

For these reasons I am in favor of reversing the judgment and awarding a *venire de novo*.

Case of Croup.—Tracheotomy.—Successful Result.—By J. W. Minor, M. D., Surgeon of Brooklyn City Hospital.—C. A.; male, æt. 18 months, was attacked with croup, Tuesday, Dec. 20, 1853. Was promptly and efficiently treated by an intelligent parent, with the remedies usually resorted to, and generally successful in domestic practice. The next day (Wednesday) he appeared to be as well as usual, except a little hoarseness and occasional cough, which was scarcely heeded; though from the subsequent development of the disease, they must have been of such a character as would have excited alarm in an educated ear. As night approached, the hoarseness and cough increased rapidly, with all the well marked characteristics of this formidable disease. The remedies which had previously produced relief were again resorted to; but although they exercised their full specific actions, there was no abatement of the symptoms.

On Thursday evening, Dr. James Crane, of this city, was sent for, and found him laboring under all the well-marked symptoms of the disease, viz: dyspnœa, dry husky voice, and cough, &c. Ordered calomel and antimony every two hours. The antimony had the desired effect, producing free vomiting. About 3 o'clock, A. M., Dr. Crane was again summoned, but being engaged with anothed case, Dr. C. R. McClellan was called. He found all the symptoms much aggravated; ordered tincture of sanguinaria in addition to calomel and antimony, but without any visible effect. Was again seen by Dr. Crane about 9 o'clock, A. M., on Friday; at which time the symptoms were so much aggravated as to induce him to request a consultation with Dr. McClellan. The urgency of the case led to the opinion that further medical treatment would be of no avail, and that surgical interference would probably be required.

With this view I was summoned between 9 and 10 o'clock, A. M. On my arrival, the little sufferer was laboring for breath, with the mouth and nostrils dilated, and muscular apparatus of respiration in the most intense state of action; the face and neck suffused with carbonated blood; the breathing stridulous, and voice husky; in short, presenting all the most pressing indications for speedy surgical interference, or else a rapid termination in death.

This, together with a brief statement of the previous history of the case by Dr. Crane, induced me to fully concur with them in the opinion that tracheotomy alone could afford a chance for life; and I proceeded to operate with the least possible delay.

The operation was performed in the usual manner, and presented no features worthy of remark, except in the difficulty in cutting through the rings of the trachea, the delay produced by which, with the violent struggles of the child, had nearly caused asphyxia.

At one time we thought that the little patient must die, the

pulse being scarcely perceptible, and the respirations faint and few; but by keeping him in an upright position, with the shoulbers alternately elevated and depressed, and by the administration of brandy and ammonia, the respiration was gradually restored.

Previous to the introduction of the tube, the posterior surface of the trachea was observed to be of a yellowish white or buff color, and led me to believe that the inflammation had reached that point, though the subsequent course of the case would favor the opinion that it had been confined to the larynx.

The clearing up of the purple hue of the face and neck, as the fullness and frequency of the inspirations furnished the blood with oxygen, was most striking and satisfactory. A tube was introduced, and retained by tapes around the neck. I may here mention that the one which was first introduced gave us some trouble, from not having the rim sufficiently broad and long, in consequence of which it could not be kept steady; my own canula was subsequently introduced, which having ruch a rim, answered very well.

The calomel and Dover's powders, which had been previously ordered, were continued, and directions left to clear out the tube with a moistened feather from time to time, to prevent the hardened crust of mucus which accumulates and obstructs it under such circumstances.

Saw him again the same evening, and found no material change except some febrile reaction, but not more than might be expected. Respiration easy and comfortable, slight mucous râles in the bronchial tubes. The extreme fretfulness and irritability of the child prevented a very accurate examination. Continued powders.

Saturday, 24th. Child passed a tolerable night, pulse accelerated, cheeks flushed, and some heat of skin.

The mother informed me that about midnight there had been discharged through the wound, *above the tube*, a tough, tenacious "phlegm," after which the air seemed to pass entirely *per vias naturales*, the opening in the convexity of the tube allowing it to do so, illustrating the importance of such an arrangement, permitting the returning functions to be gradually and steadily resumed, as the obstruction is removed.

5, P. M. Still some febrile reaction, respiration perfectly easy, and a little accelerated, but not more than would be the case with the same vascular disturbance under other circumstances. Inasmuch as the larynx seemed fully competent to perform its functions, and the trachea seemed almost free from disease, I removed the tube, as it was no longer needed, and would merely act as a foreign body. Fearing, however, that if the wound were closed too soon, a subsequent return of obstruction (in larynx) might take place, it was kept moderately dilated.

Sunday 25th. The same powders were continued. Still some

vascular disturbance, but not more than necessary for the purpose of reparation. Wound perfectly open, permitting a clear view of the posterior lining of the trachea; but strange to say, scarcely any air escapes from it. Why is this? It is only in coughing that air in any volume escapes. Directed to continue powders.

Monday, 26th. Doing well, brought edges of wound together with adhesive straps, discontinued powders.

From this time the case progressed rapidly to a favorable termination, the wound closing in less than ten days from the time of the operation.—*New York Med. Times.*

Midwifery.—*An account of seventeen cases of Parturition in which Chloroform was inhaled with pernicious effects.*—Dr. Robert Lee read before the Royal Medical and Chirurgical Society an account of seventeen cases of parturition in which chloroform was inhaled with pernicious effects. In the cases related, the injurious effects of the inhalation of chloroform were as follows:—In seven cases, insanity and great cerebral disturbance followed its exhibition. The use of the forceps was rendered necessary in five cases. In two, the contractions of the uterus were arrested, and the operation of craniotomy was performed. Peritonitis or phlebitis ensued in four cases. Epilepsy or dangersus fits of syncope supervened in two instances. Many analogous cases had been confided to the author by friends; and public rumor swelled the size of the chapter of accidents; but he wished merely to give accounts of those which had come under his own observation. The author strongly animadverted upon the levity and thoughtlessness which had accompanied the use of this subtle and dangerous poison. Soon after its discovery, before the amount of its power, and even its composition, had been fully understood, he had been horrified by the announcement of its application to midwifery, and he then prophesied that deplorable results would ensue—a prognostication which experience had unhappily proved to be correct. It was natural that women, doomed to bring forth their young in pain and sorrow, should seek every means by which they might palliate the anguish they suffer; and instances related in which the process of parturition had been effected without pain, served to render nugatory the unwelcome admonitions of those who pointed to the evils that might occur. The author expressed his opinion, that the most serious effects which arose from the inhalation of this agent, were, first, languid and inefficient uterine contractions; secondly, a greater susceptibility to the risks that arose from inflammation and fever. In spite of the fact that grave and experienced physicians had expressed their concurrence with the author's views, yet the question, whether chloro-

form should be inhaled had become almost extra-professional; as silly and ignorant women of fashion chose to set the example of using it, the cause of science and humanity thus being in the hands of the most weak and frivolous portion of the community; and, as there was a systematic concealment of the truth by the physicians who used it, he feared that young and inexperienced mothers would still be lured to their destruction. In conclusion, the author expressed a hope that his essay might tend to rescue the profession from the dominion of an ignominious and disgraceful practice.

Dr. Snow regretted that Dr. Lee had indulged in such severe remarks as those which occupied the concluding portion of his paper, more particularly as he felt great admiration for the talent displayed in the essay, and great respect for the honest and manly spirit that caused the author to attack anything which he considsidered injurious either to a patient under treatment, or to the cause of science generally. Dr. Lee certainly had related the history of several distressing cases; but, in his (Dr. Snow's) opinion, not one of the symptoms described could be referable to the exhibition of chloroform. Dr. Lee must have known that chloroform was a most volatile spirit, and that half an hour after its application no traces of it could be found in the system; and yet, in some of the cases related it was stated, that inflammatory action had arisen two or three, and even as much as fourteen days after labor. How could the evil effects described be laid, with any show of probability, to the noxious influence of chloroform? Some of the symptoms mentioned in the cases might be naturally referred to hysteria. Dr. Lee had stated, that the chloroform checked the uterine contractions; this statement Dr. Snow could contradict, as, in the many cases in which he had superintended its employment, he had continually felt the uterus contracting firmly. The amount of the spirit inhaled in obstetric practice was trifling, compared with that taken during surgical operations. One great benefit derived from its application was, that it tended to do away with the use of laudanum; and Dr. Lee ought to hail this fact with joy, inasmuch as the time that the former drug remained in the system was so short in comparison with the latter. In conclusion, Dr. Snow expressed his opinion, that, notwithstanding the recorded cases of death having occurred from the use of chloroform, which now amounted altogether to about thirty-seven, it had been the means of saving many lives, by preventing nervous excitability consequent upon severe operations.

Dr. Gream, with great respect to the learning of the author of the paper, was of opinion that he had, in this, as in many other cases, preferred antiquated measures to modern discoveries, merely because the latter were modern; and had given a list of extreme cases. He entered into the question, as to whether uterine con-

traction was checked by the inhalation of chloroform; and stated, that when a large dose was given, it did so favorably when the patient was exhausted by a long and painful labor. He announced that he was only a recent convert to the practice of giving ether or chloroform in midwifery.

Dr. Merriman related a case where chloroform was administered during labor. Pain ceased, and he returned home for a short time. On being called again to see the patient, after a lapse of two hours, having been told that she was very ill, he was unable to find any trace of the child; and the systemic effect was so violent, that it was long before labor recommenced, the uterus having been temporarily paralyzed. She never recovered from the effects of the narcotic, and was finally removed to a lunatic asylum. This case had so alarmed him, that he had never since given his assent to the employment of chloroform.

Dr. Chowne said, the subject had been so talked about publicly, that it had become extra-professional. He expatiated lengthily upon the history of chloroform, remarking, that in his opinion, it had been received as a professional remedy without sufficient inquiry having been made into its properties. He instanced as an example, the first check given to its unconditional application, which was owing to a death which had occurred when the patient was undergoing the operation of having a tooth removed. Disease of the heart having been discovered in that case, a rule was laid down that chloroform should not be administered when an ailment of that organ was existing. Dr. Chowne gave some more instances in illustration of his opinion, and finally referred to Dr. Merriman's patient, whom he had seen; and stated, that the ergot of rye had been administered after the chloroform, without having any action on the uterus.

Mr. Carter said, that seventeen cases on which to found a decided opinion whether chloroform was beneficial or otherwise in midwifery, were not enough. He had frequently used it himself with no evil results, except in two cases, in one of which the patient was in a very asthenical condition. In the other case, death ensued while the woman was under operation. He reminded Dr. Lee that it was frequently used in country practice.

Mr. Ferguson stated that being engaged exclusively in surgical practice, he was unable to offer any opposition to Dr. Lee and his statements; yet he wished to know how it was, that these terrible results described, of insanity, phlebitis, and prolonged syncope, did not occur after the inhalation of chloroform during surgical operations. He considered that Dr. Chowne had not drawn a sufficient distinction between surgical and obstetrical practice, as regards the use of this narcotic. He could not understand how paralysis of the uterus could be caused by chloroform, when fæces and urine were often forcibly expelled when the patient was under

its influence, thus showing that it does not destroy involuntary muscular action. He expressed his opinion, that our experience in England of the good or evil effects of chloroform was far too limited for a decided opinion to be given on the subject; and referred Dr. Lee to the extensive use that is made of it with beneficial results in the United States.

Dr. Lee, in reply, stated that there was a vast difference between the birth of a child and the extraction of a tooth, or a stone from the bladder, or any other surgical operation; the latter being dependent upon external manual action, the former being a work of nature, dependent upon nervous influence. The child is expelled from the uterus by regular contractions, and the exhibition of chloroform stops this action, as he had seen and as he had heard from competent persons, who had attended cases where it had been administered. Moreover, he wished to know what was the dose of the drug that should be used. It was a pretence, merely to sprinkle a few drops of the liquid upon a handkerchief, and hold it over a patient's nose—a process which he designated as "chloroform à la Reine." And when the forceps were necessary, how could the medical attendant apply them with any safety when the woman was lying writhing about on the bed in convulsions following the use of this deleterious compound? No—woman was to bring forth her young in pain and with sorrow. This was a Divine ordinance, doubtless founded with a wise and merciful intention; and he considered that the continuance of the discreditable and cowardly practice of seeking relief from a necessary suffering, by resorting to such measures as he was combating, would be fraught with danger to her, not only physically, but also morally.

The Society adjourned at the usual hour.—*Medical Times and Gazette.*

THE WONDERFUL EFFECTS OF BELLADONNA IN THE THIRD STAGE OF PNEUMONIA.—On the 2nd October, 1852, towards noon, M. X., a monk at Berguac, twenty-five years of age, pale, dark complexion, of a lymphatic, sanguine temperament, of strong constitution, enjoying general good health, was imprudent enough, after inordinate exertions in the duties of his profession, to take, at a single draught, a large glass of iced water. During the night he was taken with a chill. I called at six o'clock on the evening of the 3rd to see him and found the following symptoms: anxiety, severe headach, eyes injected, white tongue, mouth open, intense thirst, nauseau, sleeplessness, urine scant with sediment, burning dry skin, full, frequent pulse, (115), dyspnœa, painful persistent cough, *tearing* expectoration of viscid mucous, mixed with air and red

blood, severe pain in the right lung, chiefly under the nipple, dullness over the interior two-thirds of the lung of that side, with loud pneumonic crepitation. In spite of very low diet, appropriate drinks, rest, four free bleedings from the arm, (all more or less cupped,) within the space of thirty-six hours from my first visit; in spite of several large doses of tartar-emetic and ipecacuanna, two leechings, one to the painful part, the other around the inside of the ancles; in spite of blisters on the breast, and on the legs, synopism, emollient clysters, etc., the disease continued to progress.

At 10 o'clock, on the evening of the 9th, the local and general symptoms had continued to increase in number and gravity, until it was obvious that red heptization of the lungs had taken place; face pale and anxious, extreme debility; lying all the time on the back; delirium—subsultus tendinum, vague expression, stupor, dry tongue, insatiable thirst for cold water, dry skin, eyes partly open, the eyeballs turned up, the pupils dilated, the cetina slightly sensible to strong light, passing urine involuntarily, pulse low, interrupted and diaphragmatic, respiration hard, cough scant and difficult expectoration, sputa thick and discolored, dullness increased and extended, respiratory murmur well over the seat of the disease, râles and other bronchial sounds, cold extremities, tendency to sinking towards the foot of the bed.

Under the above circumstances, with no reasonable hope of evading an unhappy termination by ordinary means, we prescribed 15 centigrammes of the augueous extract of Belladonna, mixed ten grammes of "sirop de cappillaire," taken at one time.

At the end of an hour and a half the effect of the belladonna was obvious, the patient slept tranquilly and quietly. In a few minutes his temperature augmented, face became animated, warm, vapory and abundant perspiration covered the body, the pulse rose, became stronger and less frequent, respiration was relieved, the symptoms all became more favorable. After two consecutive hours of repose, the patient awoke free from delirium, and feeling much better.

At 10 o'clock in the morning the pneumonia, which had to a certain degree re-assumed the characteristics of the first stage, was in a fair way to terminate by resolution.

Convalescence continued up to the 16th of November, when it was complete.—*De La Rue.—N. W. Med. & Surg. Jour.*

Large Doses of Pills for Children.—A child in this city, three years old, was left alone by its parents last week, for a short time, when it improved the opportunity of imitating their mode of medication, by resorting to the pill-box. It appears that a box of so-

called "Indian Vegetable Pills" had been left within its reach, and the child actually took *eleven* of them! But, strange to say, no harm followed this extraordinary large dose, save the fright it caused his distressed parents. It did *physic* the little one pretty thoroughly, and *we are told* that the child's health has been improved by the accidental circumstance!

Another similar case recently occurred under our observation. A child, who had a peculiar liking for pills, during the absence of its nurse went to the medicine chest and took from it a small vial containing *homœopathic* globules, said to be "the active properties of *dulcamara*," and of which it was considered that "*three* was a large dose for an adult." The little urchin actually ate two-thirds of them, say about *one hundred!* We were consulted by the parents immediately after the *accident* was made known to them; but on learning the facts we assured them they need have no fear of any bad results, as such infinitesimals could not possibly do the child an injury. Since then, we understand the parents have abandoned the use of such very "*dangerous medicines*," and now employ a regular practitioner.—*Boston Medical and Surgical Journal.*

Use of Extract of Bullock's Blood.—Dr. Behrend thus writes: "Dr. Mauthner, to whom we are indebted for the introduction of this remedy, answers a request of mine as follows:—'I now give it to children in larger doses than before, to the extent of half an ounce in a day, dissolved in water. In many anæmic states the favorable result is so striking that the parents, perceiving the improvement of their child, generally desire a continuance of the agent. In these larger doses, it is true, the drug colors the dejections of a brown hue, but it does not give rise to the least dyspeptic symptom. It has never caused emesis, and if the child has shown some dislike to it at first, it takes it afterwards with great avidity. Children who were in the extreme stage of exhaustion, whose stomachs were so irritable that milk and beef-tea or broth were rejected by them, and cod-liver oil could not be in the least retained, bore the extract of ox-blood well, and throve admirably.' Here, in Berlin, [Mauthner is at Vienna,] the extractum bovini is given with very good effect to chlorotic and emaciated girls, and even to phthisical adults. A colleague has found it very efficacious in rachitis."—*Roger, in Jour. f. Kinderkhtn.*